

## THE ROLE OF RATINGS IN FINANCIAL SECTOR STABILITY ASSESSMENT

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*This article discusses the ratings of financial market participants as one of the indicators of financial stability. Particular attention is paid to the sector of banks and insurance corporations in the Czech Republic. Besides discussing the ratings of individual financial institutions, the article explores aggregate ratings. For the banking sector, Fitch's Bank Systemic Risk Matrix is used as an aggregate rating for assessing a country's financial stability. For the insurance sector, the article presents for the first time the results of a newly constructed aggregate rating for insurers in the Czech Republic, which performs an analogous role to the matrix mentioned above. The analyses conducted in the article confirm that the banking and insurance sectors are showing satisfactory and steadily improving performance from the ratings perspective, in line with the conclusions of previous analyses of a different type. An analysis of the correlations of rating types and of the correlations between the ratings of banks and those of their owners demonstrated that the individual types of ratings of the various agencies are not fully interchangeable and that there is a positive correlation between the average long-term ratings of banks and those of their owners.*

### 1. INTRODUCTION

Ratings are one of the indicators of the financial soundness of financial institutions and thus also of the overall financial stability of the system. They stand alongside other composite indicators which, in aggregate, i.e. by means of a single score, express the degree of resilience to risks undertaken. In the case of banks and insurance corporations, these other indicators include capital adequacy ratios, solvency ratios and financial soundness indicators.<sup>93</sup> The advantage of ratings – unlike solvency ratios and financial soundness indicators – is that they take into account qualitative information on companies, including expert expectations. On the other hand, it is important to emphasise that ratings provide only an estimate of the probability of default, and deducing the level of other types of risks from this indicator can lead to overestimation of the indicator. The recent subprime mortgage crisis in the USA shows that a correct understanding of ratings by investors is crucial for financial stability.

In this article we look at bank ratings (section 2) and assess the ability of such ratings to reflect potential support from strategic owners and the state. In this context, we examine the dependence of bank ratings on the ratings of their owners. Fitch's Bank Systemic Risk Matrix is used to assess the banking sector as a whole. In section 3, we deal analogously with ratings on the insurance market. We present the first-ever construction of an aggregate insurance sector rating, which to some extent addresses the fact that there are fewer official ratings in the insurance sector than in the banking sector and that there is no systemic rating for the insurance sector.

Our analysis of banks and insurance corporations is based on the ratings issued by the best-known agencies: Moody's, Standard&Poor's (S&P), Fitch and A.M. Best.<sup>94</sup> The methodologies, procedures and symbols used by these agencies differ, even when same types of institutions and instruments are assessed. The range of entities assessed by means of external ratings is enormous.<sup>95</sup> In this article we focus on the ratings of banks and insurance corporations in the Czech Republic. Other areas, such as sovereign ratings (indicating the state's ability to meet the obligations arising from the loans it accepts or the bonds it issues), corporate liability ratings and the use of ratings as a regulatory tool under Basel II are dealt with in other CNB publications and in the economic literature.<sup>96</sup> The role of ratings in the mortgage market crisis has been significant, as stated in section 2.1 of this report.

### 2. BANK RATINGS

In this section we look at bank ratings. The specific features of bank ratings are described and an analysis is conducted of the ratings of banks and their parents and affiliates. The Fitch matrix is used to assess the systemic banking risk of the Czech Republic.

<sup>93</sup> See Geršl and Heřmánek (2007).

<sup>94</sup> A.M. Best specialises primarily in the insurance market.

<sup>95</sup> For example, Moody's alone issues around 40 types of rating depending on the entities assessed.

<sup>96</sup> See Liška and Vinš (2005), Sůvová, Kozelková, Zeman and Bauerová (2005) and Derviz and Podpiera (2004).

### **Specific features of bank ratings**

The banking sector can be characterised by a relatively small number of defaults<sup>97</sup> compared, for example, to the corporate sector. An important role is played here by the fact that banks are subject to state regulation and supervision and enjoy potential support from the state should they run into difficulties. These support mechanisms are reflected in banks' ratings.

Rating agencies usually issue banks with a rating expressing the unsupported (self-reliant) risk of failure of the bank and a rating evaluating the state's or owner's ability and propensity to support it. These components are contained, for example, in Fitch's individual and support ratings and joint probability default analyses. The support rating<sup>98</sup> sets a floor for the bank's long-term rating.<sup>99</sup> The setting of such a floor significantly reduces the volatility of long-term ratings when severe adverse factors hit the economy. Likewise, Moody's uses a bank financial strength rating to assess a bank's own credit risk. In 2007, the agency introduced joint default analyses, which explicitly include potential support in banks' final ratings. This leads generally to an increase in long-term ratings and a slight decrease in bank financial strength ratings.

Table 1 shows the correlations<sup>100</sup> between selected types of ratings issued to banks in the CEC5 region<sup>101</sup> by the three main agencies. In all cases the correlations are positive. The most closely correlated are Moody's financial strength ratings and Fitch's individual ratings; this is consistent with their similar content. The analysis demonstrates that the individual types of ratings from the various agencies are not fully interchangeable.<sup>102</sup> For this reason, most large institutions on the market pay for ratings commissioned from all three agencies. Banks in the Czech Republic likewise have ratings from several different agencies.

**Table 1 – Correlation matrix for individual types of ratings from Fitch, Moody's and S&P**  
(correlation coefficients; CEC5 region; as of 31 December 2007)

	Fitch support rating	Fitch long-term rating	Fitch individual rating	Moody's long-term rating	Moody's financial strength rating	S&P long-term rating
Fitch support rating	1					
Fitch long-term rating	–	1				
Fitch individual rating	–	–	1			
Moody's long-term rating	0.75	0.566	0.46	1		
Moody's financial strength rating	0.112	0.23	0.797	0.5	1	
S&P long-term rating	1	1	1	0.707	1	1

Source: BankScope

Note: The selected sample of all banks in the CEC5 countries contains very few banks that have a rating both from S&P and from another agency, which means that the correlation results are affected.

<sup>97</sup> Fitch (2007a) defines bank default and bank failure as follows: "A bank has defaulted if it fails to make a timely payment of principal and/or interest. ... A bank has failed if it is kept going only by state support or support from a (deposit) insurance fund ... if it is kept going only by being acquired by some other corporate entity ... if it is kept going only by an injection of new funds from its shareholders or equivalent ... [or] if it has defaulted". Fitch (2007a) states that over the past 25 years there have been no instances of default among banks in developed economies with high support ratings (1 or 2). Up to 2003, there were only seven bank defaults in developed economies (mostly small US institutions); these banks defaulted because they failed to get third-party support.

<sup>98</sup> The support rating combines two factors: the state's or owner's ability to support (as expressed by its own long-term rating) and its readiness to support (as estimated by the agency). It ranges from 1 (an implied propensity to support of at least 99%) to 5 (a 40% propensity to support).

<sup>99</sup> For example, a bank with a support rating of 1 has a long-term rating floor of A-. In an "AAA" economy, the implicit risk that the "AAA" sovereign will not be willing to support is equal to 44 b.p. (for more details on the calculation, see Fitch, 2007a).

<sup>100</sup> For the purposes of these correlations, the qualitative rating scale was converted into a numerical one assuming that the difference between the individual rating scores is the same. However, the rating agencies do not set target quantitative default rates for the individual rating scores; only the historical rates are known. Hence, the rating cannot be precisely quantified and the approach used is something of a simplification.

<sup>101</sup> All banks in the Central and Eastern European countries (the Czech Republic, Hungary, Poland, Slovakia and Slovenia) which have a rating. The close correlation results for S&P's ratings are due to the fact that the BankScope database contains very few banks that have ratings from both S&P and another agency. The sample contains around 350 credit institutions.

<sup>102</sup> In addition to the dependence on the specific sample assessed, we should emphasise in particular:

- the diversity of the agencies' models,
- the expert component of the rating, which further increases the uniqueness of each agency's assessment,
- the possibility of a clearer assessment of a given company, in particular as regards the number of unknowns entering future expectations,
- the speed at which changes are incorporated into an updated rating,
- the rating scale, as a more detailed scale allows more nuances to be differentiated,
- better knowledge of a specific environment by a particular agency,
- and sometimes also the declared own interests of the agency.

**Table 2 – Moody's, Fitch and S&P rating scales**

	Moody's			Fitch			Standard&Poor's	
	Long-term	Short-term	Fin. strength	Long-term	Support	Individual	Long-term	Short-term
Excellent	Aaa	P-1	A	AAA	1	A	AAA	A-1+
	Aa1	P-1	A-	AA+	1	A	AA+	A-1+
	Aa2	P-1	B+	AA	1	A	AA	A-1+
	Aa3	P-1	B	AA-	1	A/B	AA-	A-1+
Good	A1	P-1	B-	A+	1	B	A+	A-1
	A2	P-1	C+	A	1	B	A	A-1
	A3	P-2	C	A-	1	B/C	A-	A-2
Reasonable	Baa1	P-2	C-	BBB+	2	C	BBB+	A-2
	Baa2	P-2	C-	BBB	2	C	BBB	A-2
	Baa3	P-3	D+	BBB-	2	C/D	BBB-	A-3
Speculative	Ba1	Not prime	D+	BB	3	D	BB+	B
	Ba2	Not prime	D	BB	3	D	BB	B
	Ba3	Not prime	D-	BB	3	D/E	BB-	B
Highly speculative	B1	Not prime	E+	B	4	E	B+	C
	B2	Not prime	E+	B	4	E	B	C
	B3	Not prime	E+	B	5	E	B-	C
	Caa	Not prime	E	C	5	E	CCC	C

Source: Moody's, Fitch, Standard&Poor's

### **Bank ratings in the Czech Republic**

The profiles of the external ratings issued by the main international rating agencies between 2000 and 2007 illustrate the positive development of the Czech banking sector and the positive macroeconomic trend<sup>103</sup> (Table 5 and Chart 2). The main reason for the rising ratings are higher profitability and cost-effectiveness of banks, increased competition, a significant increase in service quality, and improved credit risk management (e.g. CNB, 2007a). In recent years, banks have been strengthened by the completion of their restructuring processes and by growing interest in loans.

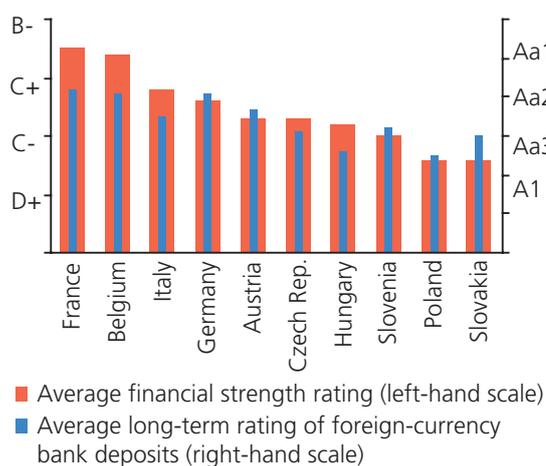
The average Moody's financial strength rating for Czech banks is C with a positive outlook, and the average long-term rating in the Czech currency is Aa3 with a stable outlook. Compared to the other CEC5 banking sectors, the Czech system has the highest financial strength rating (at the same level as Austria) and the second-best long-term rating (behind Slovenia) (Chart 1). Like their parents, the largest Czech banks have the highest possible support rating (i.e. an implied propensity to support of 99%).

Chart 2 compares the evolution of the average rating of the three largest Czech banks and that of their owners. The slightly higher rate of improvement of the Czech banks' rating in 2001–2003 is linked with higher relative profitability of subsidiary banks in this period (CNB, 2005).

<sup>103</sup> The analyses focused on the three largest Czech banks, ČS, ČSOB and KB, which account for around 60% of the assets of banks based in the Czech Republic. This makes the sample sufficiently representative (Derviz and Podpiera, 2004). Besides these banks, ČEB and J&T have external ratings, but their market shares are very small. In the past, Živnostenská banka also had a rating, but it went out of business in 2007. This bank was not included in the analysed sample, as the options for investigating the relationships were limited owing to changes in ownership.

**Chart 1 – Comparison of average ratings of CEE5 countries and home countries of parents of Czech banks and branches operating in Czech Republic**

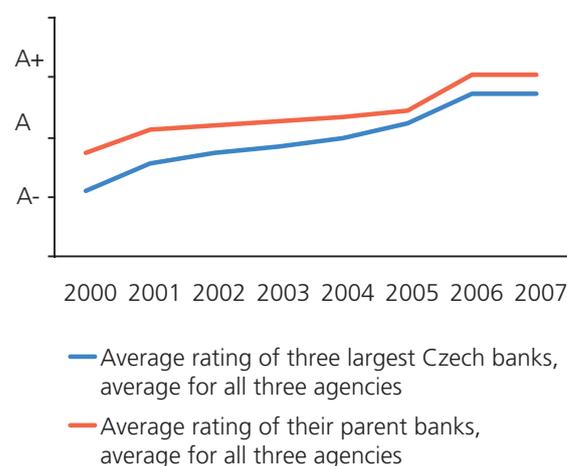
(as of 31 December 2007; asset-weighted average)



Source: Moody's

**Chart 2 – Average ratings of three largest Czech banks and their parent banks**

(long-term foreign currency ratings, Moody's, Fitch and S&P; simple average)



Source: BankScope, CNB calculation

The evolution of the ratings of Czech banks since 2000 shown in Table 3 indicates that the ratings of Czech banks and their parent banks from S&P correlate most closely. This result can be explained by the different construction of the ratings of this agency. Unlike Moody's and Fitch, S&P does not have products specifically distinguishing between ratings with potential state or owner support and those without it, and probably takes such support into account more in its long-term ratings. The low correlation coefficient for financial strength ratings (Moody's) is consistent with the logic of this rating, which measures the institution's internal strength regardless of the probability of owner or state support. The negative correlation of Fitch's ratings in the case of SocGen/KB is due to the temporary lowering of Société Générale's rating and the steady rise in KB's rating in 2003–2005, which corresponds to the higher relative profitability of the subsidiary bank in this period (CNB, 2005).

**Table 3 – Correlation of series of ratings of largest Czech banks and their parent banks**

(correlation coefficient; 2000–2007; yearly observations)

Owner/bank	Moody's financial strength rating	Moody's long-term rating	Fitch long-term rating	S&P long-term rating
SocGen/KB	0.25	0.41	-0.16	0.65
KBC/ČSOB	-0.27	0.22	0.60	0.65
Erste/ČS	0.13	0.76	0.47	0.64

Source: BankScope, CNB calculation

### **An aggregate rating for the Czech banking sector**

A Fitch rating – the Bank Systemic Risk Matrix (see Fitch, 2007b) – can be used to assess the financial stability of a country and the stability of its financial system as a whole. The matrix combines two indicators: a Banking System Indicator (BSI) and a Macro-Prudential Indicator (MPI). The BSI measures the true "intrinsic" banking system strength regardless of potential state or owner support and is calculated as an asset-weighted average of individual bank ratings. The BSI ranges from A (very high quality) to E (very low quality). The MPI tracks three key indicators: the ratio of private sector credit to GDP; the real effective exchange rate; and equity prices. Hence, the MPI takes into consideration the existence and severity of a set of macroeconomic circumstances that in the past has anticipated full-blown systemic crises in the banking sector. It ranges between 1 (low vulnerability of the system) and 3 (high vulnerability). A score of 3 applies when the ratio of private sector credit to GDP is more than 5% and either equity prices are more than 40% above trend or the real effective exchange rate is more than 9% above trend. The advantage of this approach is that it takes account of the fact that weak spots in the banking

system (always reflected in banks' individual ratings and aggregated in the BSI) can have systemic impacts in an adverse macroeconomic environment (reflected in the MPI). We can see some limitations in this matrix in that the three-point MPI scale makes it impossible to differentiate between countries where average annual credit growth is around 20% (the case of the Czech Republic) and countries where it is around 40% (e.g. Latvia and Estonia) – both these groups get MPI = 2. The result is that half of the 87 countries that Fitch includes in this matrix are in category MPI = 2 and 9% are in category MPI = 3<sup>104</sup> – i.e. roughly 60% of the countries lie in the higher-risk part of the matrix. Table 4 shows the results for the EU member states. It is clear from the table that the Czech Republic has the best bank systemic risk rating of all the CEC5 countries.<sup>105</sup> This matrix seems to be an appropriate complement to the IMF's Financial Soundness Indicators as discussed in Geršl and Heřmánek (2007).

**Table 4 – Bank Systemic Risk Matrix for EU member states**

(Fitch, 2007; MPI = Macro-Prudential Indicator; BSI = Banking System Indicator)

BSI	MPI		
	1	2	3
A		Luxembourg	
		Netherlands	
		Spain	
		Switzerland	
		United Kingdom	
	Austria	Belgium	
	Germany	<b>Czech Republic</b>	
B		Denmark	
		Estonia	
		Finland	
		France	
		Greece	
		Ireland	
		Portugal	
		Italy	
		Sweden	
	C	Cyprus	Latvia
		Malta	
		Slovakia	
		Slovenia	
D	Hungary	Bulgaria	
	Poland	Lithuania	
		Romania	
E			

Source: Fitch

Note: MPI = 1 low vulnerability; MPI = 3 high vulnerability

**Table 5 – Comparison of ratings of Czech banks and their parent banks, branches and affiliates in CEC5 countries**

(ratings of main rating agencies;<sup>106</sup> as of 31 December 2007)

		Moody's	S&P	Fitch
Three largest Czech banks	KB	A1/P-1/C	A+/A-1	AA-/1/B/C
	ČSOB	A1/P-1/C	n.a.	A+/1/B/C
	ČS	A1/P-1/C	A/A-1	A/1/B/C
Parent banks	Société Generale (France)	A1/P-1/B	AA/A-1+	AA/1/A/B
	KBC Bank (Belgium)	Aa2/P-1/B-	AA-/A-1+	AA/1/A/B
	Erste (Austria)	Aa3/P-1/C	A/A-1	A/1/B/C
Branches	ING Bank N.N.	Aa1/P-1/B	AA-/A-1+	AA/1/A/B
	HSBC Bank plc	Aa3/P-1/n.a.	AA-/A-1+	AA/1/B
	Commerzbank AG	Aa3/P-1/C+	A/A-1	A/A-n.a.
	Deutsche Bank AG	Aa1/P-1/B	AA/A-1+	AA-/1/B
	Calyon S.A.	Aa1/P-1/C	AA-/A-1+	AA/1/B/C
	Fortis Bank SA/NV	Aa2/P-1/C-	AA-/A-1+	AA-/1/n.a.
Affiliates of three largest Czech banks	SKB Bank d.d.			
	(Soc. Gen. Slovenia)	A1/P-1/D+	n.a.	n.a.
	Slovenska sporitel'na			
	(Erste Slovakia)	A1/P-1/C-	A-n.a.	A/1/C/D
	Erste Bank Hungary	A2/P-1/C+	n.a.	n.a./1/n.a.
	KB (Soc. Gen. Slovakia)	n.a.	n.a.	n.a.
	Nova Ljubljanska Banka (KBC Slovenia)	Aa3/P-1/C	n.a.	A-/1/C
	K&H Bank Rt. (KBC Hungary)	A2/P-1/C	BBB/n.a.	A+/1/D
	Kredyt Bank S.A. (KBC Poland)	A2/P-1/D	BBB/n.a.	A+/1/D

Source: Moody's, S&P, Fitch, BankScope

Note: Moody's (long-term rating/short-term rating/financial strength rating), S&P (long-term rating/short-term rating), Fitch (long-term rating/support rating/individual rating).

The results of the analysis show that the improving ratings of Czech banks and the clear convergence trend towards their owners' ratings indicate a steady rise in the performance and stability of the Czech banking system (e.g. CNB, 2007b). At the same time, the broadly similar ratings of their affiliates generate no concerns about potential problems arising and spilling over into the domestic financial system. An analysis of the correlations between rating types and of the correlations between the ratings of banks and those of their owners

<sup>104</sup> These are non-European countries, e.g. Canada, Korea, South Africa, Iran and Azerbaijan.

<sup>105</sup> The different MPIs for Hungary and Poland can be explained by the slower credit growth in these countries in 2005 and 2006, which did not exceed 15% – the limit for a switch to MPI = 2 (Fitch, 2007b).

<sup>106</sup> The rating scales are given in Table 2.

For more details on definitions and rating scales, see [www.moody.com](http://www.moody.com), [www.fitchratings.com](http://www.fitchratings.com) and [www.standardandpoors.com](http://www.standardandpoors.com).

demonstrated that the individual types of ratings from the various agencies are not fully interchangeable and that there is a positive correlation between the average long-term ratings of banks and those of their owners.

### 3. RATINGS ON THE INSURANCE MARKET

This section discusses the individual ratings of institutions operating in the insurance market. The small number of institutions with ratings<sup>107</sup> is a limiting factor for the assessment of this sector in the Czech Republic. We tried to solve this problem by constructing our own aggregate rating of the insurance company sector.

#### *Specific features of insurance company ratings*

The agencies issue insurance companies with two main types of ratings. The financial strength rating gives an independent expert opinion on an insurer's ability to pay under its insurance policies and contracts in accordance with their terms (Standard&Poor's, 2007). Its ability to meet other debt obligations, especially those associated with issues of fixed-interest securities, is the subject of a debt rating. The financial strength rating and the debt rating can differ from each other, as they serve different purposes and do not measure the same risks.

Only some of the insurance companies with one rating request a rating from another agency. Most global insurance market participants opt for a rating from A.M. Best. The literature states that the ratings issued by Moody's and S&P tend to be lower than those issued by A.M. Best (e.g. Pottier and Sommer, 1999).<sup>108</sup> We noted the same fact in our sample of foreign insurers and reinsurers relevant to the Czech insurance market, with A.M. Best assigning a higher rating than the other agencies in 13 cases out of 18.

Unlike banks, which can obtain support from their owners or the state if they run into difficulties, insurance companies can obtain extraordinary funds to meet their obligations from contractual reinsurers as well. These institutions play an important role in the financial stability of the insurance sector, as reinsurance represents a transfer of risk from insurer to reinsurer.<sup>109</sup> When a rating is assigned to an insurer, the financial strength of the relevant reinsurers is taken into account as well. A high-quality reinsurer should mean a higher rating for the reinsured insurer. Rating agencies state explicitly that they take the financial strength expressed by the relevant ratings of contractual reinsurers into consideration in the rating process (A.M. Best, 1996). Contracts between insurers and reinsurers often include rating clauses containing a trigger mechanism that comes into operation when the reinsurer's rating falls below a certain level (ECB, 2006).<sup>110</sup> These links between the financial strength ratings of insurers and those of their contractual reinsurers were used to construct an aggregate rating for the Czech insurance sector, which is presented later in this section.

#### *Insurance company ratings in the Czech Republic*

Česká pojišťovna is currently the sole domestic insurance company that has a rating from two internationally recognised agencies. ČSOB Pojišťovna is the only other insurer with a rating from one of these agencies. The Czech insurance market thus lags behind the advanced economies in terms of the number of companies with ratings.<sup>111</sup> The two insurers mentioned above have sizeable market shares.<sup>112</sup> Their ratings are of investment grade and are steadily rising<sup>113</sup> in line with the conclusions of CNB documents (CNB, 2006, 2007a) concerning the quality and stability of the insurance sector.

<sup>107</sup> Only two out of the total of 34 insurance companies based in the Czech Republic (i.e. 6%) currently have a rating from an external agency.

<sup>108</sup> A.M. Best started issuing ratings to insurance companies back in 1899 and for a long time specialised exclusively in this sector. Other agencies entered the insurance segment of the market in the 1980s and the ratings newly issued to insurance companies had to conform to their previous practices.

<sup>109</sup> The transfer of risk to a reinsurer simultaneously increases the insurance capacity of the insurer, which can insure more risks and generate a bigger profit. This occurs only to the extent to which the reinsurers are capable of meeting their liabilities.

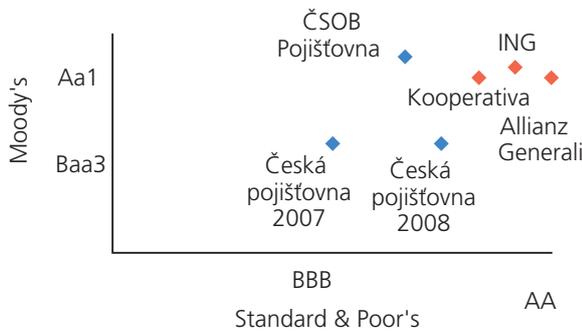
<sup>110</sup> For example, the rating clause may state that if the reinsurer's rating is downgraded below a certain level (the rating trigger), the insurer may require the reimbursement of part of the premiums it paid or terminate the contract.

<sup>111</sup> This situation has two apparent causes. Low pressure from other market participants is exacerbated by the price of ratings, which can be high for relatively small institutions. Subsidiaries and branches of major international insurers also operate in the Czech insurance market. Their ratings can sometimes be used for a simplified assessment of an entity in the Czech Republic.

<sup>112</sup> The Czech Insurance Association gives shares of 31% and 7% of total premiums written for Česká pojišťovna and ČSOB Pojišťovna respectively. Both these insurers are members of the group of five large insurance corporations (CNB, 2007b).

<sup>113</sup> The agencies find strengths in several areas. In the case of Česká pojišťovna they emphasise its long-term stable business performance, its good capital adequacy and liquidity, and also its strong market position. A major reason for its February rating upgrade from S&P was its incorporation into Generali PPF Holding. ČSOB Pojišťovna's rating is underpinned by its growing strategic importance for the parent KBC Insurance NV, including its increasing integration into the KBC group, and its improving financial performance.

**Chart 3 – Ratings of the largest insurers active in the Czech Republic and their owners**  
(as of 31 December 2007)



Source: Databases of the rating agencies

Note: Both ratings have been issued to insurers based in the Czech Republic only in the case of Česká pojišťovna, whose rating by S&P rose to A in February 2008. ČSOB pojišťovna has been issued with an S&P rating. In all other cases, the ratings pertain to the owners.

**Table 6 – Ratings of the largest reinsurers of insurers active in the Czech Republic**  
(as of 31 December 2007)

	Country	S&P	Moody's	Fitch	Best
Münchener Rückversicherung	DE	AA-	Aa3	AA-	A+
SCOR Paris	FR	n.a.	n.a.	n.a.	A-
Swiss Re Germany	DE	AA-	Aa2	AA-	A+
Swiss Re Frankona					
Rückversicherung	DE	AA-	Aa2	AA-	A
National Indemnity Company	US	n.a.	Aaa	AAA	A++
Hannover Re	DE	AA-	A3	A+	A
Wiener Städtische	AT	A+	n.a.	n.a.	n.a.
Transatlantic Reinsurance,					
Paris branch	FR/US	n.a.	n.a.	n.a.	A+
New Reinsurance Company	CH	AA-	n.a.	n.a.	A+

Source: Databases of the rating agencies

It is clear from Chart 3 and Table 6 that the ratings of the two Czech insurers are lower than those of the owners of the other large domestic insurers and those of the relevant reinsurers. This is due primarily to the smaller size of the domestic institutions and the limiting value of the Czech Republic's sovereign rating.

**Construction of an aggregate rating for the Czech insurance sector**

In this section we present our proposed calculation of an aggregate rating for the Czech insurance sector. The aim is to estimate an average rating for insurance companies in the Czech Republic which might, to some extent, make up for the lack of ratings actually assigned by agencies. The resulting value may, in line with the definition of the insurance company financial strength rating, serve as an indicator of the sector's ability to pay under its insurance policies and contracts in accordance with their terms. The result may also be used as one of the inputs for a comprehensive assessment of the sector.

We are chiefly interested in the category of large insurance companies, which accounts for roughly 75% of premiums written in the Czech Republic (CNB, 2007b). Our proposed method takes into account the relevant valid ratings of insurers, reinsurers and owners, the level of reinsurance of liabilities, and the weights of the individual insurers. This information enters the calculation via the parameters given in Table 7.

**Table 7 – Input parameters**

**Weight of insurer**

An insurance company's market share is usually expressed in terms of its share in premiums written. In our case, we opted for a variable that better matches the character of the financial strength rating, which reflects the ability to meet obligations arising under insurance policies and contracts. The weight is therefore given by the insurance company's share in total technical provisions, which represent obligations arising under insurance policies and contracts.

**Reinsurance**

Reinsured amounts are divided into three categories according to the amount pertaining to the particular reinsurer and according to the quality of the reinsurer as expressed by its rating. Of the total of almost 300 contractual reinsurers of large insurance companies, we chose the 15 largest reinsurers, which account for 73% of the total reinsurance. The reinsurers and the amounts reinsured by them are divided into:

- the set of reinsurers having a financial strength rating from at least one of the four main agencies (12 reinsurers)
- the set of reinsurers that do not have such a rating (3 reinsurers)
- the remaining 27% of the reinsured amount, entering the calculation in a unified way with a single rating.

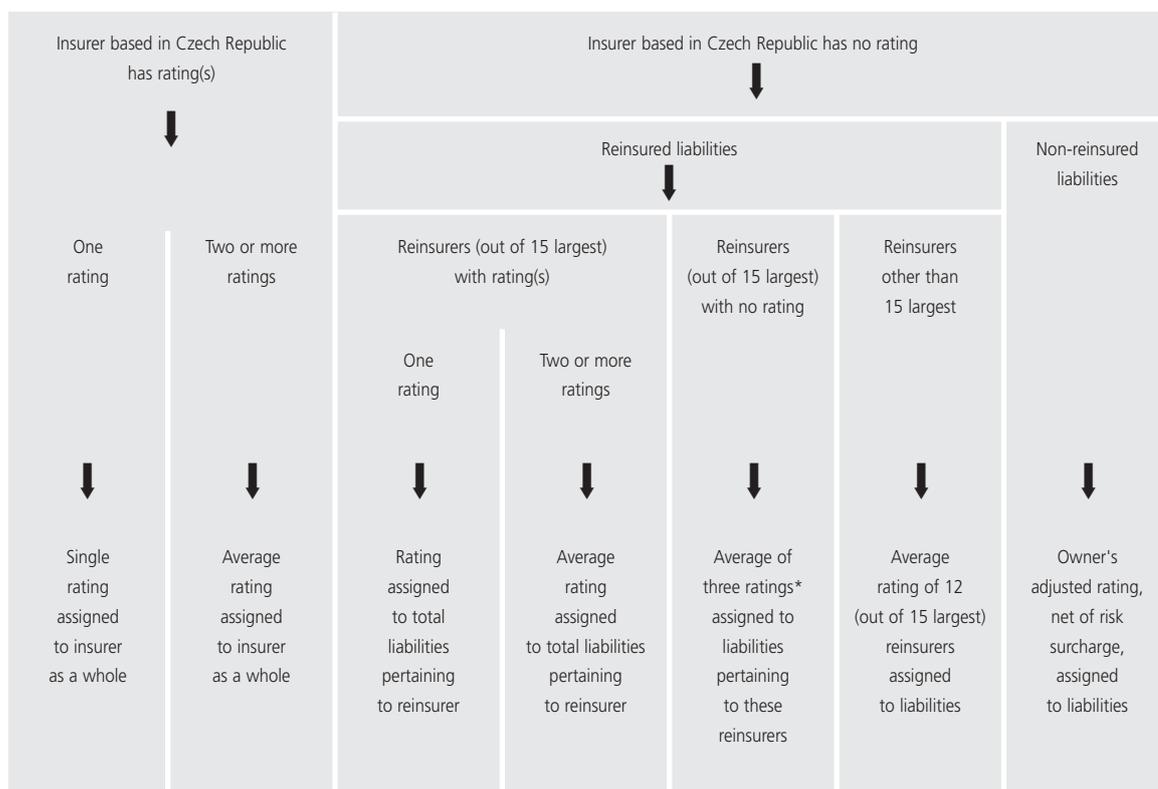
**Ratings**

The insurance companies are progressively assigned up to seven types of ratings (from agencies or calculated), which are derived from the existing ratings of the insurers and their owners and reinsurers.

The five largest insurers have around 25% of their non-life insurance liabilities reinsured with contractual partners. Including life insurance, which is rarely reinsured, the reinsurance ratios among the individual large insurers fall to 5%–22% of premium liabilities.<sup>114</sup> The calculation covers the 15 largest reinsurers out of the total of almost 300 reinsurers that have contracts with the five large insurers. These 15 reinsurers account for 73% of the total reinsurance, while 67% of them have at least one rating and 53% at least two ratings.

Ratings are assigned to the individual insurers according to the priorities shown in Table 8. If an insurer has a rating/ratings from an external agency, this rating – or, where relevant, its average rating – is assigned to it as a whole. In other cases, the ratings of contractual reinsurers are taken into account for reinsured liabilities. For non-reinsured liabilities, a reduced rating of the owner is used. The resulting calculated rating of the insurer is a combination of the weighted ratings of the reinsurers and the weighted adjusted ratings of the owners. The ratings of the individual institutions weighted by their shares in technical provisions then enter the calculation of the rating of the entire group of large insurance companies.

**Table 8 – Procedure for assigning ratings to insurers**



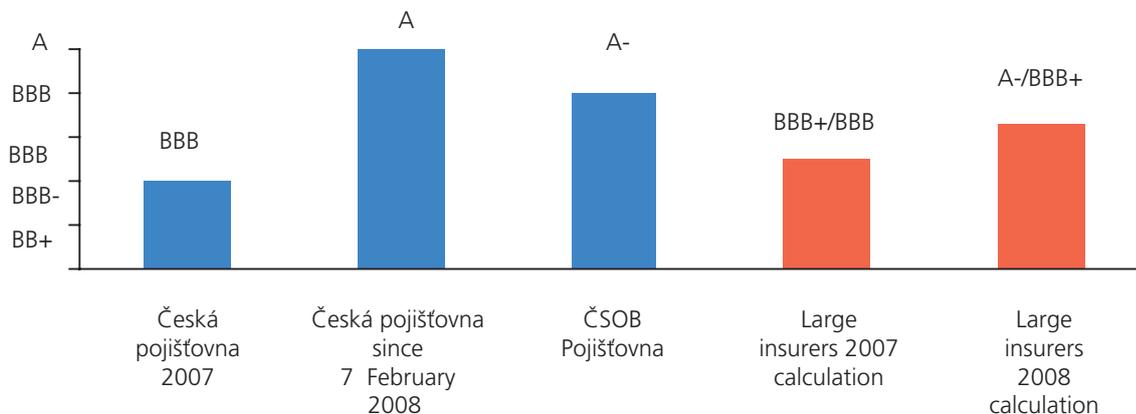
Note: The three ratings entering the calculation are: 1. the owner's adjusted rating, net of a risk surcharge; 2. the simple average of the ratings of 12 (out of the 15 largest) reinsurers = a constant; 3. the average of the ratings of reinsurers (out of 15 largest) weighted by the contractual amounts for a given insurer.

<sup>114</sup> Insurance companies employ various strategies for reinsuring their liabilities. The largest domestic insurers have around 100 such contractual partners. Other insurers, by contrast, have exclusive partners. Reinsurance is often arranged with a member of the same financial group.

When setting the risk surcharge for the owner's rating, which our method employs to calculate the rating for the non-reinsured portion of the liabilities, we used the relationship between the existing ratings of domestic institutions and their owners. In the case of insurers, such a relationship exists between the existing ratings of domestic institutions and their owners. In the case of insurers, such a relationship exists between ČSOB Pojišťovna and KBC Insurance N.V. of Belgium, whereas in the case of banks such relationships exist between all the Czech-based banks analysed. Our method for calculating the rating of insurance companies draws on the conclusions of the analysis of the ratings of Czech banks and their owners described in section 2 of this article and presented in Chart 2. We start by assuming that the relationships that apply in the banking sector also exist for insurance companies and that the evolution of the ratings of foreign owners can be a good guide for estimating the evolution of the ratings of domestic insurers. That our approach is justified is confirmed by Česká pojišťovna's February rating upgrade, which demonstrated how important it is for an insurance company in the Czech Republic to have ownership or operational links with a strong foreign partner. In the calculation we lowered the rating by three grades. The resulting ratings calculated for the group of large insurance companies in the Czech Republic are illustrated in Chart 4.

At the end of 2007, our calculated average rating for insurance companies in the Czech Republic, expressed using the scale employed by S&P, stood at BBB+/BBB, i.e. investment grade.<sup>115</sup> Taking into account Česká pojišťovna's rating upgrade issued by S&P in February 2008, the overall calculated rating increases by one grade. This improvement corresponds to Česká pojišťovna's weight in the sector and to the rise in its rating by three grades.

**Chart 4 – Existing ratings of insurers in Czech Republic and calculated aggregate ratings according to S&P scale**  
(as of 31 December 2007)



Source: S&P database, CNB, CNB calculation

Note: The group of large insurers in 2008 reflects a rise in Česká pojišťovna's rating on 7 February 2008 by S&P, while all other ratings keep their end-2007 values. The group of large insurers accounts for around 75% of the Czech market. The bar height represents the average rating attained.

The calculated aggregate financial strength rating approximates the quality level of the Czech insurance sector as a whole as regards insurers' ability to meet their obligations arising under insurance policies and contracts and thus to have a positive impact on the financial stability of other economic sectors acting in the role of their clients.

Our constructed indicator has some limitations. In a situation where an insurer's reinsured liabilities are on the rise but the relevant reinsurer's rating is downgraded, the insurer's calculated rating could decrease.<sup>116</sup> Another

<sup>115</sup> This calculated rating took values of Baa1/Baa2 according to the Moody's scale, BBB+/BBB according to the Fitch scale and B+/B according to the A.M. Best scale.

<sup>116</sup> However, this could only happen if the reinsurer's rating was lower than the reduced rating of the insurer's owner. Looking at the data in Chart 3 and Table 6, this is not very likely.

limitation is that the relationship between the ratings of institutions operating in the Czech Republic and the ratings of their owners is based on a small number of observations, so the calculation is affected by a small sample of existing relationships. The fact that the ratings between parent and subsidiary insurers do not necessarily move in the same way, owing to differing performances of specific institutions and differing macroeconomic trends in individual countries (leading, for example, to a change in the sovereign rating in one relevant economy), can also be regarded as something of a limitation.

The method outlined above cannot be applied to the banking sector, as it does not feature institutions with functions analogous to those of reinsurance companies. The Czech banking sector, moreover, has a far higher rating coverage than the insurance sector.<sup>117</sup> The need to construct an aggregate rating is thus less pressing than in the case of insurance companies. For the same reason, one can view the construction of an aggregate insurance sector rating as being less important in national sectors where the majority of insurers have ratings (in terms of number and market share) and in countries where the insurance sector represents only a negligible part of the financial sector.

#### 4. CONCLUSIONS

The ratings of Czech banks and their parents and affiliates, as well as the systemic rating of the Czech banking sector, confirm that these institutions are in sound financial health, including as regards the potential spillover of problems within banking groups. Also, the individual ratings and our constructed aggregate rating for Czech insurers confirm the positive assessment of the insurance sector conducted earlier by means of stress testing. The analysis confirmed the mainly positive correlations between the ratings of Czech banks and those of their owners. At the same time, however, the discussion in this article demonstrated that the individual types of ratings or same ratings from the various different agencies are not interchangeable. Rating agencies do not automatically reflect an owner's rating downgrade in its subsidiary institution's rating, as confirmed by a negative correlation between the ratings of banks and those of their owners in some cases and also by current developments – Société Générale's rating was recently downgraded as a result of the liquidity crisis following the subprime crisis in the USA, but none of its subsidiaries had their ratings lowered.

Some rating products, such as Fitch's Bank Systemic Risk Matrix or our proposed aggregate insurance company rating, can be used to complement the Financial Soundness Indicators. Both these indicators, however, have some limitations, just like ratings themselves do. None of the ratings discussed here can be used to assess the financial stability of the system or the stability of individual banks and insurers without knowledge and application of other supporting indicators and tools.

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