

The Determinants of Solvency for Insurance Companies Listed on the Palestine Exchange

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Abstract

This study aimed to find the factors that influenced solvency of insurance companies which listed in PEX, so, we use a panel data for seven firms from (2012-2019), and test the impact for five independent variables: profitability, liquidity, financial leverage, investment and claims on solvency as a dependent one, and took firm size as a control variable. Accordingly, multi-regression model used and found that profitability and liquidity insignificantly affect solvency, in converse each of financial leverage, investment and claims have a significant positive impact on solvency. accordingly, we recommend the Palestinian insurance companies to invest in surplus and liquidity, in addition to take a strict policy to accept risks.

Keyword: "Solvency determinants," "Insurance companies," "Palestine Exchange," "Financial leverage

1. Introduction

Palestine, as any other country, got influenced by the emergence of the insurance sector regardless of its weak economic system. It is worthy of mentioning here that the Palestinian insurance sector is newly established. When the Palestinian Authority returned in 1994, it became the legal body that is responsible for supervising the insurance sector. However, the sector was still in a bad place due to the lack of management control and organization over its work and the expansion of the culture of insurance at the needed level, resulting in a weak and unorganized insurance sector for almost ten years (Mai et al., 2019). This was the case until the Palestine Capital Market Authority (PCMA) was established in 2004. (Asa'd et al., 2023), which became the authorized legal body to supervise, manage and control the insurance sector and play great role in the issuance of the Palestinian Insurance Law in 2005 (Palestine Economic Policy Research Institute, 2016).

Insurance sector is considered as one of the most important sectors around the economic world, first appeared in 15th century, then it expanded to include Reinsurance sector in the 19th century, which is growing with the hipper technological development. Even in Palestine, Insurance sector is also considered as an important part of the Palestinian economy, it regulated and supervised by Palestine Capital Market Authority, which include 10 companies, 8 of them are listed in Palestine Exchange. Despite this small number of companies, it contributes a good rate in insurance portfolio and Gross Domestic Production subsequently, so in 2019 individual income from this sector increased to 60\$, (Capital Market Authority,2022).

Insurance defined as a financial risk management tool in which the insured transfers a risk of potential financial loss to the insurance company that mitigates it in exchange for monetary compensation known as the premium (The Economic Times, industry, Insurance, 2022). The importance of insurance companies arises from the safety, stability and guarantee provided for the entire economic sectors. Moreover, investing insurance surplus and pumps it in the market which mainly affected the financial situation of the economy.

Solvency is considered as a priority of the insurance industry. It is defined as the available adequate assets to face the financial obligation in the appropriate time, or the ability to pay its obligation and compensation without financial difficulties (Hasnawi, 2018). Therefore, it is important for every investor, especially policyholders, to know the solvency position of the companies. Therefore, to enable these companies to achieve their goals, improve their performance, enhance their reputation, and avoid risks as much as possible, it must be determined that there are factors affect its solvency, its returns and market shares accordingly (Affolter, I. (2009) So, based on the given information, this study will explain the factors affecting the solvency in insurance companies listed in PEX (2012-2019), it mainly explains issues related to the insurance sector, which under-research especially in Palestine, this is only the second focus on determinants of solvency.

2. Theoretical background, literature review & Development Hypotheses:

2.1 Theoretical background, literature

According to many previous researches that study the impact of solvency in insurance companies, we conclude several different results and develop hypotheses:

Abdel Jawad & Ayyash, (2019) examines the Solvency of Insurance Companies in Palestine and highlighted the nature and strength of relations between solvency and each of liquidity, investment, leverage and claims, based on panel data for 2010-2017 and found that the financial leverage is negatively related to solvency, while the claims have a positive relation on the financial solvency, but both of liquidity and investment are insignificant affect in solvency.

Shiu, (2005). examines the solvency determination in the UK insurance market by examining 26 variables of economic and specific firm-factor based on panel data for 1986-1999. It found that solvency was negatively related to most of the tested factors especially insurance leverage (IL) and firm size, but liquidity has no effect. Additionally, it found that solvency determinates changed from one epoch to another.

Yakob, et al., (2012) study about Life Insurance and Takaful operators on 19 firm in Malaysia using the available data between 2003-2007. It aims to provide a platform to policyholder to have a clearer idea on Takaful insurance companies' solvency. It found that there had been a significant relation between solvency and investment income, total benefit paid for the capital, surplus ratio, financial leverage and liquidity. Then, it found that the investment income had a positive relation with solvency while the other three determents have a negative relation, so the policyholder can assess the insurers' financial strength and make a smarter decision on choosing the insurer operator.

Caporale, et al., (2017) Assesses sing the insolvency risk of general insurance firms in UK, including 30 years of data for 151 firms, which one of its key findings is the insolvency risk varies across firms depending on their business, by measure the effect of each leverage, profitability and liquidity, then find that there are significantly affected the insolvency risk of the insurers.

Rauch& Wende. (2014) aimed to find how the financial crises in 2008 affected the creditability of solvency prediction for insurance companies, and how reliably regulators can forecast financial strength, especially during a financial crisis, by using data from German companies for the years 2004-2011. It found that there was a negative relation between investment and solvency particularly in years 2008 and 2009 and this averse to the normal situation as 2010 and 2011. Additionally, higher premium growth led to weaker financial strength in 2008 and 2009, generally the aggressive premium growth led to weaker insurer's solvency in times of economic downturn. Accordingly, they found that German regulators can take an action to protect policyholders' interest, by their ability to detect insurers in financial distress early enough without any tighter regulation or higher capital requirements.

Gour& Gupta, (2012). was conducted to determine the solvency ratio at Indian insurance companies Based on data collected from 2009 to 2012. In order to calculate the solvency ratio, divided the available solvency margin by the required solvency margin ($\text{Solvency Ratio} = \text{Available Solvency Margin} / \text{Required Solvency Margin}$), and then mathematically calculated the capital, profitability, liquidity safety...etc. The factors negatively affect the solvency ratio, then it found that all of life insurance companies need to inject addition capital to maintain the required solvency margin.

Jurkonytė & Girdzijauskas. (2010). aimed to assess on Lithuania's Non-Life Insurance companies and impact of change on solvency margin requirements according to the project of solvency, based on financial strength assignment framework of insurance company proposed by Daykin et. al (1994), which regard that each of investment, solvency, reinsurance, expenditure and insurance operations as indicators that affected the financial strength, found the assumption of solvency 2 requirement which result in an increasing of insurance margin negatively affect the financial performance indicators (profitability & claims) in short team, (insurance margin-solvency margin).

VK, M.et al., (2021). tested the factors affected insurance companies' solvency in Sri Lanka by using Generalized Method of Moment (GMM) for 11 insurance companies licensed in Sri Lanka from 2010-2019. It found that both of profitability and economic growth had a significant positive impact on the solvency, while Leverage has a significant negative influence on the solvency, meanwhile each of firm size, inflation demonstrate and premium growth having an insignificant influence on solvency.

2.2 Development Hypotheses

Caporale, et al., (2017). study finds that profitability has significantly affected insolvency in insurance companies, and in accordance to VK, M.et al., (2021). study, which found that there is a negative relation between profitability and solvency, meanwhile each of the researchers Burca, & Batrinca (2014)., Jurkonytė & Girdzijauskas. (2010), And Gour & Gupta (2012) VK, M.et al., (2021). are found that there is a positive relation between profitability and solvency, but Abdel Jawad, & Ayyash, (2019) and Shiu,. (2006). studies found that there is a negative relation between financial leverage and solvency also Gour & Gupta (2012) found that there is a positive relation between liquidity and solvency, but both of] Abdel Jawad, & Ayyash,

(2019).and Shiu, (2005), found liquidity had no impact on solvency. Accordingly, consequently, the following hypotheses can be formulating:

H1 Profitability has a positive significant impact on solvency in insurance companies listed in PEX.

H2 liquidity has no impact on solvency in insurance companies listed in PEX:

H3 Financial leverage has a significant negative impact on solvency in insurance companies listed in PEX

H4 Investment has a significant negative impact on solvency in insurance companies listed in PEX.

H5 Claims have a significant negative impact on solvency in insurance companies listed in PEX.

3. Methodology:

3.1 Sample selection and data sources

The sample of our study includes the insurance companies listed in the Palestinian stock Exchange, which consist of (National insurance company, Trust International Insurance Group, Palestine insurance, Al-Takaful insurance, Global United Insurance, Al-Mashreq insurance, AL- Ahlia insurance and Tamkeen) companies. Tamkeen Palestinian Insurance company excluded because it listed in 2021, which is not confirmed with study stated period which start from 2012. So, (7) firms only selected, by using panel data covers 8 years from 2012 to 2019. And all of these data collected throw the financial reports on the website of Palestine Capital Market Authority.

To address the subject, prove and deny the hypotheses adopted for the study, the multi regression model was used

$$\text{Solv.} = \alpha + \beta_1 \text{pro} + \beta_2 \text{Liq} + \beta_3 \text{FL} + \beta_4 \text{Inv.} + \beta_5 \text{Cli.} + e$$

Where β is the coefficient regression (beta), e is error and all of variables definition, measurements and briefs are shown on Table (1).

3.2: Variables measurement

This study aims to determine the impact of solvency on insurance companies listed in PE using several independent variables which affected solvency, such as profitability, liquidity, financial leverage, investment and claims, and using the solvency as a dependent variable, and control them by firm size, then found the nature of relation between these variables.

Table 1. variables measurement

	Variable	Label	Definition	Measurement	Reference
Dependent variable	Solvency	Solv	The ability of a company to meet its long-term debts and financial obligations	total liabilities / Total Assets	of Abdel Jawad, & Ayyash, (2019)
Independent variables	Profitability	Pro	Return on Asset is measured as the ratio of profits generated to the total assets	ROA = net income before tax / total asset	(Margret, 2011), (Abdeljawad et al.,2022), (Nour, & Momani, 2021)
	Liquidity	Liq	Ready for payment of claims and surrenders	Current assets / current liability	Gour& Gupta, (2012)
	Financial leverage	FL	amount of debt a firm use to finance assets	Primum/ NI	(Shiu, 2005), (Nour et al.,2022),(Amer,et al,2022)
	Investment	Inv	Rate of return on investment	ROI= (net profit/ cost of investment)	(Brockett, P. etl, 2004)
	Claims	cli	The proportion of claims, defined as the proportion of compensation losses that occur to the insured.	Compensation/ Equity	Abdel Jawad, & Ayyash, (2019)
Control variable	Firm size		Total Assets		

4. Result and discussion

4.1 Descriptive statistics

Table 2 Descriptive Statistics analysis

Variable	Obs	Mean	Std. Dev.	Min	Max
SOLV	56	.714	.091	.526	.979
Pro	56	.031	.031	-.057	.139
Liq	56	.927	.23	.522	1.56
FL	56	22.244	38.127	-12.062	201.273
INV	56	.553	1.399	-.256	7.246
CLIM	56	1.315	1.93	.117	13.993

The total average for solvency was $71.4\% \pm 9.1\%$, and the maximum solvency ratio in Palestine was 97.9% which is related to MIC, on other hands the minimum solvency ratio was 52.6% this is related to TIC. Also the total average of profitability was $3.1\% \pm 3.1\%$, with highest profitability ratio related to PICO was 13.9% , at the same time the lowest one was -5.7% which related to MIC. liquidity total average found as $92.7\% \pm 23\%$, additionally, the maximum liquidity ratio in Palestine was 156% this ratio relates to TRUST, meanwhile the min. ratio was 52.2% which is related to PICO. The total average of financial leverage was $2222.4\% \pm 3812.7\%$, and the highest and huge ratio was 20127.3% related to PICO, but the lowest which was -1206.2% related to the same company, and this may be related to the varies in Net income (Loss) values from year to another comparing with increasing premium values yearly. The highest investment ratio in Palestine was 724.6% which related to GUI, and the lowest one related to MIC was -25.6% , and Investment total average was $55.3\% \pm 139.9\%$. Then finally claims total average was $-131.5\% \pm 193\%$, with maximum ratio 1399.3% , was related to MIC, but the minimum ratio which related to PICO equal -11.7% , and all of these figures show the ratios over the years.

NIC is National Insurance, TRUST is Trust International insurance, PICO is Palestine Insurance, TIC AL- Takaful Palestinian Insurance, GUI is Global United Insurance, MIC is AL Mashriq Insurance, AIG is Ahliea Insurance Group.

4.2 Normality, multicollinearity and heteroscedasticity.

Table 3. Shapiro-Wilk W test for normal data

Variable	Obs	W	V	Z	Prob>z
R	56	0.962	1.956	1.441	0.075

Table 4. Heteroscedasticity test

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of SOLV

chi2(1) = 0.45

Prob > chi2 = 0.5013

To test the normality of our data we use Shapiro-Wilk test, as the table (3) shown the result higher than .05 which is mean our data is normally disrepute, we also use Heteroscedasticity test, table (4) the result is higher than .05 that is also mean there is no Heteroscedasticity problem, data are normally dispersion.

Table 5. Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) SOLV	1.000						
(2) Pro	-0.440	1.000					
(3) Liq	-0.321	0.154	1.000				
(4) FL	0.335	-0.249	-0.167	1.000			
(5) INV	0.189	0.124	0.248	-0.021	1.000		
(6) CLIM	0.612	-0.439	-0.259	0.003	0.015	1.000	
(7) total assets	-0.402	0.073	0.173	-0.182	0.023	-0.327	1.000

Matrix of correlation used to find the multicollinearity between variables, as result displayed above, there is no multicollinearity concern, as all of them less than .80 (Gujarati and Porter, 2003).

4.3 Regression analysis

To find the results of regression model were performed in our data to detect the relation between solvency and other ratios, fixed and random effect mode were employed, Hausman test were also used (see table 6) to choose the best model, the result of this test higher than .05, accordingly random effect model recommended to use, this may be due to political fluctuation, the circumstance of insurance sector in our country or it may be related to sensitivity of solvency as a ratio and that's what most of previous studies found like (Shiu, 2006).

Table 6. Hausman (1978) specification test

	Coef.
Chi-square test value	-93.844
P-value	1

Table 7. Analytical analysis

VARIABLES	(1) fixed SOLV	(2) random SOLV
Pro	-0.557** (0.251)	-0.557* (0.313)
Liq	0.0452 (0.0397)	-0.0710* (0.0393)
FL	0.000414** (0.000190)	0.000546** (0.000235)
INV	0.0100 (0.00639)	0.0170*** (0.00621)

CLIM	0.0196*** (0.00445)	0.0197*** (0.00532)
total assets	5.06e-10 (3.36e-10)	-4.36e-10* (2.33e-10)
Constant	0.617*** (0.0518)	0.777*** (0.0458)
Observations	56	56
R-squared	0.547	
Number of ID	7	7

*** p<0.01, ** p<0.05, * p<0.1

The regression analysis results (table 7) present that solvency insignificantly affected by profitability, this result unconformity with Caporale, et al., (2017) and VK, M. et al., (2021), this may be due to control variable which regulate and control variable profitability that arises from firm size differences, which lead us to reject H1 profitability has a positive significant impact on solvency in insurance companies listed in PEX.

We also found that solvency insignificantly affected by liquidity, this is the confirmed with results studies of Abdel Jawad, & Ayyash, (2019) and (Shiu, 2005) results, accordingly, H2 liquidity has no impact on solvency in insurance companies listed in PEX is accepted.

There is a significant positive relation between financial leverage and solvency and this is actually confirming with Yakob, et al., (2012) and Caporale, et al., (2017), so, we reject H3 financial leverage has a significant negative impact on solvency in insurance companies listed in PEX, so we advise the Palestinian insurance companies to improve it leverage by balancing between the collected premiums and affordability to pay compensation

we found a significant positive relation between investment and solvency this result matched with Yakob, et al., (2012), this lead us to reject H4 investment has a significant negative impact on solvency in insurance companies listed in PEX, accordingly we advise the Palestinian insurance companies to invest more and more to enhance their solvency position.

Then we also found that there is a significant positive relation between claims and solvency and this constant with results of Abdel Jawad, & Ayyash, (2019) study, so, we reject the last hypothesis, H5 claims have a significant negative impact on solvency in insurance companies listed in PEX, this positive effect can be justified by the increase in the proportion of claims paid to equity, it will increase total liabilities to total assets, and thus increase the solvency of insurance companies, Abdel Jawad, & Ayyash, (2019).

5. Conclusion and Recommendations:

Our study found that profitability and liquidity have no impact on solvency in insurance companies listed in PE, we also found that each of financial leverage, investment and claims have a significant positive impact on solvency in insurance companies listed in PEX which enable this companies to take risks wisely, meet its obligations to policyholders and then definitely meeting its insurance obligations, Burca, & Batrinca, (2014).

Accordingly, we recommend the Palestinian Insurance companies to improve and increase it solvency by investing it liquidity or surplus, in secured and stable investment, generally increase their investment activities, with take in consideration Solvency II regulation which imposes a high risk charge on equity. Then to have a strict policy to accept risks, because there is a Three factors that determine market risk, life insurance companies bear significant underwriting risk associated with life insurance contracts, the main components of which are duration and expiration risk. In contrast, property and general insurance risk is the second largest risk for property and casualty insurers after market risk, because this will affect its financial leverage by influencing premiums amounts, additionally, claims and compensation amount which may paid, be. Also our study suggest further researches like comparison studies using the same variables but after IFRS 17 application, and examine another factors as economic growth, premium growth and reinsurance

6. Contributions/Practical Implications:

The research makes significant theoretical and empirical contributions to literature regarding The Determinants of Solvency for Insurance Companies Listed on the Palestine Exchange and other countries. The research results might help both decisions makers' and practitioners in insurance companies to be more ready to understand the determinants of solvency components and technical efficiency and effectiveness of information's in insurance companies. The management should focus on how to manage resources and wealth; therefore, it should be taken into serious consideration when formulating their strategy. This strategy

formulation process can be enhanced by fully integrating and their indicators into management practices to improve their performance.

7. References:

- Abass Hmady, Z. (2020), "The role of the international standard IFRS 17 in accounting for insurance companies - An applied study in the National Insurance Company", *Administration and economic journal*, No 126, pp 248- 227
- Abdeljawad, I., Dwaikat, L.M., Oweidat, G.: The Determinants of Profitability of Insurance Companies in Palestine. *An-Najah University Journal for Research - B (Humanities)* 36, 439-468 (2022)
- Abdel Jawad, Y. A., & Ayyash, I. (2019). Determinants of the solvency of insurance companies in Palestine. *International Journal of Financial Research*, 10(6), 188. <https://doi.org/10.5430/ijfr.v10n6p188>
- Affolter, I. (2009). *Solvency Regulation and Contract Pricing in the Insurance Industry*. Dissertation no 3601 Difo-Druck GmbH, Bamberg.. [https://www1.unisg.ch/www/edis.nsf/SysLkpByIdentifier/3601/\\$FILE/dis3601.pdf](https://www1.unisg.ch/www/edis.nsf/SysLkpByIdentifier/3601/$FILE/dis3601.pdf)
- Al Momani K.M.K., Jamaludin N., Abdullah W.Z.W.Z.W., Nour AN.I. (2021) The Influence of Relational Capital on the Relationship Between Intellectual Capital and Earnings Per Share in the Digital Economy in the Jordanian Industrial Sector. In: Musleh Al-Sartawi A.M.A. (eds) *The Big Data-Driven Digital Economy: Artificial and Computational Intelligence*. *Studies in Computational Intelligence*, vol 974. pp 59-76, Springer, Cham. https://doi.org/10.1007/978-3-030-73057-4_5
- Amer F, Hammoud S, Onchonga D, Alkaiyat A, Nour A, Endrei D, Boncz I. Assessing Patient Experience and Attitude: BSC-PATIENT Development, Translation, and Psychometric Evaluation—A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*. 2022; 19(12):7149. <https://doi.org/10.3390/ijerph19127149>
- Asa'd, I.A.A., Nour, A., Atout, S. (2023). The Impact of Financial Performance on Firm's Value During Covid-19 Pandemic for Companies Listed in the Palestine Exchange (2019–2020). In: Musleh Al-Sartawi, A.M.A., Razzaque, A., Kamal, M.M. (eds) *From the Internet of Things to the Internet of Ideas: The Role of Artificial Intelligence*. *EAMMIS 2022. Lecture Notes in Networks and Systems*, vol 557. Springer, Cham. https://doi.org/10.1007/978-3-031-17746-0_42
- Brockett, P. L., Cooper, W. W., Golden, L. L., Rousseau, J. J., & Wang, Y. (2004). Evaluating solvency versus efficiency performance and different forms of organization and marketing in US property—liability insurance companies. *European Journal of Operational Research*, 154(2), 492–514. [https://doi.org/10.1016/s0377-2217\(03\)00184-x](https://doi.org/10.1016/s0377-2217(03)00184-x)
- Britannica, Historical development of insurance <https://www.britannica.com/topic/insurance/Historical-development-of-insurance>
- Burca, A., & Batrinca, G. (2014). The determinants of financial performance in the Romanian insurance market. *International Journal of Academic Research in Accounting Finance and Management Science*, 4(1), 299-308. <https://doi.org/10.6007/IJARAFMS/v4-i1/637>
- Capital Market Authority, Annual Reports. Retrieved December 22, 2022, from <https://www.pcma.ps/>
- Caporale, G. M., Cerrato, M., & Zhang, X. (2017). Analyzing the determinants of insolvency risk for general insurance firms in the UK. *Journal of Banking & Finance*, 84, 107–122. <https://doi.org/10.1016/j.jbankfin.2017.07.011>
- Christiansen, M. C., & Niemeyer, A. (2014). Fundamental definition of the solvency capital requirement in solvency II. *ASTIN Bulletin*, 44(3), 501–533. <https://doi.org/10.1017/asb.2014.10>
- Cummins, J. D., & Derrig, R. A. (1988). *Classical insurance solvency theory*. Kluwer Academic Publishers.
- Gour, B., & Gupta, M. C. (2012). A review on solvency margin in Indian insurance companies. *International Journal of Recent Research and Review*, 2(1), 43-47
- Jurkonytė, E., & Girdzijauskas, S. (2010). The solvency requirements in the project solvency II: evaluating the impact of insurance companies' financial results. *Transformations in business & economics*, 9, 147-157.
- Mai Jabarin, Abdunaser Nour and Sameh Atout (2019). Impact of macroeconomic factors and political events on the market index returns at Palestine and Amman Stock Markets (2011–2017). *Investment Management and Financial Innovations*, 16(4), 156-167. [http://dx.doi.org/10.21511/imfi.16\(4\).2019.14](http://dx.doi.org/10.21511/imfi.16(4).2019.14)

Margret, J. E. (2011). *Solvency in financial accounting*. Routledge.

Nour, Abdalnaser; Bouqalieh, Bassam; and Okour, Samer, (2022) "The impact of institutional governance mechanisms on the dimensions of the efficiency of intellectual capital and the role of the size of the company in the Jordanian Shareholding industrial companies," *An-Najah University Journal for Research - B (Humanities)*: Vol. 36: Iss. 10, Article 6. https://digitalcommons.aaru.edu.jo/anujr_b/vol36/iss10/6

Nour, Abdalnaser and AL Momani, Kamelia (2021) "The influence of human capital on return of equity among banks listed in the Amman stock exchange," *An-Najah University Journal for Research - B (Humanities)*: Vol. 35: Iss. 9, Article 5. PP1500-1530 DOI: [10.35552/0247-035-009-005](https://doi.org/10.35552/0247-035-009-005) https://digitalcommons.aaru.edu.jo/anujr_b/vol35/iss9/5

Palestine Economic Policy Research Institute. (2016, February 17). The insurance sector in Palestine - achievements, failures and challenges. Roundtable (2), p. 2016.

Palestine Exchange. (n.d.). Retrieved December 22, 2022, from <https://web.pex.ps/>

Rauch, J., & Wende, S. (2014). Solvency prediction for property-liability insurance companies: Evidence from the financial crisis. *The Geneva Papers on Risk and Insurance - Issues and Practice*, 40(1), 47–65. <https://doi.org/10.1057/gpp.2014.16>

Shiu, Y.-M. (2005). The determinants of solvency in the United Kingdom Life Insurance Market. *Applied Economics Letters*, 12(6), 339–344. <https://doi.org/10.1080/13504850500092640>

Spaulding, W. C. (n.d.). Insurance contracts. Retrieved December 21, 2022, from <https://thismatter.com/money/insurance/insurance-contracts.htm>

The Economic Times, industry, Insurance. Retrieved December 10, 2022 <https://economictimes.indiatimes.com/definition/insurance>

Yakob, R., Yusop, Z., Radam, A., & Ismail, N. (2012). Solvency determinants of conventional life insurers and takaful operators. *Asia-Pacific Journal of Risk and Insurance*, 6(2). <https://doi.org/10.1515/2153-3792.1143>

VK, M., Dissanayake, S. D. S. T., Perera, N. S. P., Prashansi, M. A. R., Rathnayaka, M. I. M. K., & Rasika, D. G. L. (2021). Determinants of Solvency in the Insurance Sector: Evidence from Selected Insurance Companies in Sri Lanka. *Advisory Editors*, 89.