

REVIEW
of the official reviewer for dissertation work
of Yessentay Aigerim on the theme
“The world financial crisis and national pension systems: impact assessment and development prospects”
presented for the degree of Doctor of Philosophy (PhD) in the specialty 6D051300 – World economy

№	Criteria	Eligibility (one of the options must be checked)	Justification of the position of the official reviewer
1.	The topic of the thesis (as of the date of its approval) corresponds to the directions of development of science and/or state programs	1.1 Compliance with priority areas of science development or government programs:	The topic of the thesis " The world financial crisis and national pension systems: impact assessment and development prospects " quite fully corresponds to the direction of development of pension provision. It is focusing on the need to adjust and respond flexibly to modern challenges such as aging and Covid-19 and ongoing changes in the pension system, through the improvement of its main components.
		1) The thesis was completed within the framework of a project or target program financed from the state budget (indicate the name and number of the project or program) 2) The thesis was completed within the framework of another state program (indicate the name of the program) 3) The dissertation corresponds to the priority direction of the development of science, approved by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan (indicate the direction)	The United Nations, International Labor Organization and World Bank policy brief documents in the area of social security, retirement, aging and poverty reduction determine the correctness and timeliness of the direction and subject of study. Contributing approved state programs are as follows: a) Concept for the development of public administration in the Republic of Kazakhstan until 2030 b) Strategy "Kazakhstan-2050 c) The concept of further modernization of the pension system of the Republic of Kazakhstan until 2030 years
2.	Importance for science	The work makes /does not make a significant contribution to science, and its importance is well disclosed/not disclosed	The thesis makes a significant contribution to world pension economics, and its importance is well disclosed. The author made a fairly broad analysis at the level of developed and developing countries in order to study the impact of various conditions on the functioning and stability of the national pension system. The collected data and the revealed patterns are of undoubted scientific interest.
3.	The principle of independence	Self-reliance level: 1) High;	The study shows the author's knowledge of the details of the relationship processes in the pension system, which is ultimately reflected in a decent

		2) Medium; 3) Low; 4) No independence	number of schemes formulated and compiled by the applicant, indicating a high level of independence of the study and professional competence. Besides the study of global crises and an attempt of their typology indicates sufficient independence of the researcher.
4.	The principle of inner unity	4.1 Justification of the relevance of the thesis: 1) Justified ; 2) Partially justified; 3) Not justified	The topic of the dissertation is relevant and justified. The stability of national pension systems is impossible without systemic anti-crisis measures. Especially since the typology of crises is quite extensive and is not limited to financial consequences only. This is pretty well portrayed by the latest pandemic.
		4.2 The content of the thesis reflects the topic of the thesis: 1) Reflects ; 2) Partially reflects; 3) Does not reflect	The content of the dissertation reflects the topic of the dissertation
		4.3. The purpose and objectives correspond to the topic of the thesis: 1) correspond ; 2) partially correspond; 3) do not correspond	The purpose and objectives correspond to the topic of the thesis
		4.4 All sections and provisions of the thesis are logically interconnected: 1) completely interconnected ; 2) the interconnection is partial; 3) there is no interconnection	The study has an internal unity all sections of the dissertation are logically completely interconnected.
		4.5 The new solutions (principles, methods) proposed by the author are reasoned and evaluated in comparison with the known solutions: 1) there is a critical analysis ; 2) partial analysis; 3) the analysis does not represent one's own opinions, but quotes from other authors	The thesis reveals the national processes and mechanisms of pension provision and global crisis, through the prism of a critical approach.
5.	Scientific novelty principle	5.1 Are the scientific results and provisions new? 1) completely new; 2) partially new (25-75% are new) ;	Scientific novelty is reflected in the formulation, theoretical justification and practical solution for the development of national pension systems during global crisis.

		3) not new (less than 25% are new)	The following scientific results are partially new: 1) The analysis of opportunities for the introduction of pension insurance services; 2) The impact of financial crisis on pension system; 3) A several scenarios for national pension system have been developed as a response to the challenges of the global financial crisis and pandemic; 4) An analysis of world pension experience.
		5.2 Are the dissertation findings new? 1) completely new; 2) partially new (25-75% are new) ; 3) not new (less than 25% are new)	The findings and conclusions are partially new formulated concisely, logically following the content of the thesis and revealing the completeness of the research work.
		5.3 Technical, technological, economic or management decisions are new and reasonable: 1) completely new ; 2) partially new (25-75% are new); 3) not new (less than 25% are new)	Technical, technological, economic or management decisions are quite new and reasonable.
6.	The validity of the main findings	All main conclusions are/are not based on scientifically significant evidence or well-grounded (for qualitative research and areas of training in the arts and humanities)	All major findings are based on scientifically sound evidence. It would be good to provide an explanation for some of the results obtained for a consistent presentation of the material. For example there is no description of the following equation on page 103 $y = 4E-13x^5 - 2E-11x^4 + 5E-10x^3 - 9E-09x^2 + 9E-08x + 1E-06$; $R^2 = 0.89086$ In the final part of the thesis and its conclusions, the applicant summarizes the results of the research work done and, based on the patterns identified, offers a whole set of specific recommendations.
7.	The main provisions for the defense	It is necessary to answer the following questions for each provision separately: 7.1 Is the provision proven? 1) proven; 2) rather proven; 3) rather not proven; 4) not proven 7.2 Is it trivial? 1) yes; 2) no	1 provision Features of pension reforms in developed and developing countries, taking into account the birth rate, the development of financial systems and economies in general. 7.1- proven; 7.2 - no, 7.3 – yes; 7.4 - medium; 7.5 – yes 2 provision

		<p>7.3 Is it new? 1) yes; 2) no 7.4 Application level: 1) narrow; 2) medium; 3) wide 7.5 Is it proven in the article? 1) yes; 2) no</p>	<p>Factors of financial stability of the pension system: macroeconomic environment, trends in the global economy, economic growth, development of the corporate sector. 7.1 – proven; 7.2 – no; 7.3 – yes; 7.4 - medium; 7.5 – yes 3 provision Models for analyzing the relationship between global financial crises and the stability of pension provision, in particular, taking into account changes in demographic processes at the international level, and their impact on the financial stability of the pension system. Here two analyzes are submitted by the applicant. The first one is based on regression analysis where the dependent variable is the pension burden PB while the independent variables are the number of population in the largest city, mortality rate, life expectancy at birth. The model itself is good, it includes the most important factors for calculating the pension burden but in my opinion one of the most important variables reflecting crisis is missing. Since the proposed provision 3 is discussing the relationship between global financial crisis and the stability of pension provision. The second analysis/model includes a forecasting of three scenarios (realistic pessimistic and optimistic) and here the demographic crisis is presented in the form of the above factors, but the presented actuarial calculations of the UAPF do not quite reflect the financial stability of the pension system. Also since model was based on theory of generations it would be a great advantage to consider demographic dividends. 7.1 – rather proven; 7.2 – no; 7.3 – yes; 7.4 - medium; 7.5 - yes 4 provision Suggestions and recommendations on the development of the pension system of Kazakhstan, taking into account the world experience 7.1 - proven;</p>
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8.	The principle of reliability. Reliability of sources and information provided	8.1 Choice of methodology - is justified or the methodology is described in sufficient detail 1) yes ; 2) no	The methodology of the conducted regression analysis is described in sufficient detail. The methods of other types of presented analyzes and calculations are mentioned in the main text of the thesis.
		8.2 The results of the thesis were obtained using modern methods of scientific research and methods of processing and interpreting data using computer technologies: 1) yes ; 2) no	The results of the thesis were obtained using modern methods of scientific research and methods of processing and interpreting data using computer technology. The factor analysis, regression, forecasting, as well as other tools for processing statistical data were used in the process of analyzing the pension system
		8.3 Theoretical conclusions, models, identified relationships and patterns have been proven and confirmed by experimental research (for areas of training in pedagogical sciences, the results have been proven on the basis of a pedagogical experiment): 1) yes ; 2) no	Theoretical conclusions, models, identified relationships and patterns have been proven and confirmed by experimental research. The thesis describes in sufficient detail the pension systems of developed countries and uses Mercer indicator.
		8.4 Important statements are confirmed / partially confirmed / not	Important statements in the theoretical review are supported by references to relevant and reliable scientific literature. I assume that the literature 32, 33 given in the table 11 on page 88 was erroneous because it does not correspond to the source 74 given in the main text regarding this table.
		8.5 Used literature sources are sufficient /not	The sources used in the amount of 82 references are sufficient for a

		sufficient for a literature review	literature review. It is clear that there is a lack of fundamental research in the rather applied pension sphere and global crises area. It would be a great advantage to review the latest research especially on the pandemic in order to enrich the thesis.
9	Practical value principle	9.1 The thesis has theoretical value: 1) yes ; 2) no	The thesis has a theoretical significance, which is expressed in the systematization of theoretical and methodological foundations and a critical understanding of global crises and national pension systems.
		9.2 The thesis is of practical importance and there is a high probability of applying the results obtained in practice: 1) yes ; 2) no	The thesis is of practical importance and there is a high probability of applying the results obtained in practice, which will require amendments to some legislative documents. The results obtained can be taken into account in further modernization of national pension provision, used in the implementation and improvement of legal and social programs, which, in turn, will have a positive impact on the economy of Kazakhstan. The applicant submitted an Implementation act confirming the implementation of the research results at Joint Stock Company Unified Accumulative Pension Fund (Appendix A of the thesis)
		9.3 Are the practice suggestions new? 1) completely new; 2) partially new (25-75% are new) ; 3) not new (less than 25% are new)	The proposals for practice are partially new and can be used by state and local authorities, scientific institutes and researchers.
10.	The quality of writing and design	Academic writing quality: 1) high; 2) average ; 3) below average; 4) low.	The scientific style of narration is sustained in the presented work. The dissertation is presented on 129 pages of computer text (A4) and includes: normative references, notations and abbreviations, an introduction, three main sections, a conclusion, a list of references and appendix A. Materials are illustrated with 16 tables and 9 figures. Table 9 on page 81-82 is not clear and inconsistent with the main body text. Some words in Figure 6 on page 87 are written in Russian. Two tables 11 are presented on page 88 and 89. In Figure 9 on page 103 the forecasting is supposed to be until 2026 however period presented is covering 1990-2018. The idea of a forecasting based on dependence data is rational, but there is no continuation of the trend on the chart until 2026.

The content of the dissertation corresponds to the objective and tasks of the research, as a complete independent study contains a set of reliable scientific and practical results put forward by the applicant.

The dissertation work's problem statement, methods of its solution, scientific novelty and results obtained meet the requirements for the dissertations of applicants for the degree of Doctor of Philosophy (PhD) by Control Committee in Education and Science of the Republic of Kazakhstan.

Yessentay Aigerim's dissertation research on "The world financial crisis and national pension systems: impact assessment and development prospects" is recommended for public defense, the applicant deserves to be awarded the degree of Doctor of Philosophy (PhD) in the specialty "6D050013 – World Economy".

Official reviewer:

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of Finance and Accounting
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