

## **THE ROLE OF MATHEMATICS SCHOOL IN INSURANCE AWARENESS IMPROVEMENT**

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### **Abstract**

**Financial education in early age is one of many ways which can be taken to build the insurance awareness. Government can develop mathematics curriculum in primary and secondary schools which include financial capability as one of national standard competencies. Teachers should be provided with the support and resource in form of teaching material they need to give them the confidence and competence to teach good finance education in school.**

**Keywords:** *Financial Education, Mathematical Learning, Insurance*

### **1. INTRODUCTION**

Insurance has important roles in the economy of a country. Insurance functions as complements public social safety net which reduces the financial burden of governments in funding the protection for the citizens. Insurance also stabilizes the financial situation of individuals, families, and business by preserving their incomes and consumption spending in the event of major loss. Insurance also serves as an important function as institutional investors and driver of financial market development. Insurance broadens the scope of economics activities, by enabling risky activities that people they would otherwise avoid, e.g. major critical surgery. Insurance can facilitate efficient risk management and mitigation through risks pricing.

The Indonesian insurance industry has remained rather stagnant in terms of the numbers of institutions over the five years from 1999 through 2003. According to the report published by Allianz AG, etc, "In 1993, there are 2 social insurers and Jamsostek, 62 life insurers, and 107 general insurers. These values were relatively the same compare to 2003, which are 2, 60, and 104, respectively." Although the number of institutions has remained relatively stagnant, there has been significant growth in terms of premiums received. This is important because it reflects a greater efficiency in the

industry that should yield reduced premiums over time. Allianz AG, etc. report says that premiums paid in 1999 were 3 trillions of IDR and 6.5 trillions of IDR in 2003.

Insurance density and penetration express a large and underdeveloped market in Indonesia. Insurance density is a measure of the annual value of insurance premiums per capita. This is an important measure of insurance activity because it limits the population might cause in comparing insurance premium activity. Allianz AG, etc. report says that the insurance density In Indonesia for 2003 was \$15 for total insurance premiums, of which \$7 was for life product and \$8 for general insurance products. These values are very low compared to the world average of \$470, \$267 and \$203, respectively. However, the insurance density in Indonesia is similar to that in India and the Philippines. Some neighboring countries do significantly better, such as Malaysia and Thailand with total densities of \$227 and \$80, respectively.

Insurance penetration (total insurance premiums as a percentage of GDP) is also a good indicator of the strength of an insurance market. National insurance penetration level is around 1.49 percent. This is a level similar to that in the Philippines and Vietnam, but this ratio is far lower than in Malaysia or Thailand, with 5.35 percent and 3.45 percent, respectively. These low values for insurance penetration and density reflect a significantly under-developed insurance market with huge potential for growth

Indonesian insurance penetration level is fairly low compare to other Asian country. It is caused by many reasons, which are macroeconomic condition, low of government commitment, and low of insurance awareness. This paper will discuss the improvement efforts of insurance awareness through mathematical education.

## **2. INSURANCE AWARENESS**

Awareness means having knowledge of or state of elementary or undifferentiated consciousness. Awareness of has a similar meaning with knowledge of, understanding of, appreciation of, recognition of, attention to, perception of, consciousness of, acquaintance with, enlightenment with, sensibility to, realization of, familiarity with, mindfulness of, cognizance of, sentience of.

Insurance is a risk management technique primarily used to hedge against the risk of a contingent, uncertain loss that may be suffered by those individuals or entities that have an insurable interest in scarce resources, by transferring the possibility of this

loss from one interested person, persons, or entity to another. Insurance means also a system to protect persons, groups, or businesses against the risks of financial loss by transferring the risks to a large group who agree to share the financial losses in exchange for premium payments. Therefore, insurance awareness means state of elementary or undifferentiated consciousness about risk exposure and concept, function, along with type of insurance products.

Insurance awareness of Indonesian people is considered low compare to any Asian countries. OECD research (2008) describe that several reasons may explain this matter. First reason is short-term mindset of people which not encourage them to consider long-term risks. People will get older and maybe become dependent with others, for that reason they have to prepare their cost living and health care since young. Secondly, people are reluctant to seek coverage for a risk they consider unlikely or are unaware of. This is typically the case for risks that have serious financial and economic consequences but are characterized by low likelihood of occurrence. People often seem to underestimate damages caused or needs for resources stemming from potential disasters and thus their coverage needs. Level of financial literacy also determines country level of insurance awareness. Countries with low level of financial literacy tend to have low level of insurance awareness.

### **3. FINANCIAL EDUCATION**

Financial education is one of approaches which can be taken, beside government regulation and policy, to increase the level of financial literacy, enhance the awareness, understanding, capability and responsibility of people with regard to risks and insurance products and guide them in making sensible choices.

OECD research (2005) define financial education as “the process by which financial consumers/investors improve their understanding of financial products (including risk and insurance products), concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being (including ensure an adequate coverage of their risk-exposure profile in the long run)”.

#### **4. MATHEMATICS SCHOOL**

Mathematics is the study of quantity, structure, space, and change. On the other hand, Ebbutt suggests that the interpretation of mathematics as pure science should be differentiated with mathematics in school. In general, Ebbutt and Straker (1995: 10-63) defines school mathematics as the nature of mathematics, as follows:

1. Mathematics as search activity patterns and relationships implication of this view of learning. Here the teacher gives students the opportunity to conduct discovery and investigation patterns to determine the mathematical relationship to make conclusions.
2. Mathematics as a creativity that requires imagination, intuition and invention. The implication of this view of learning is to encourage initiative and provide an opportunity to think differently, encourage curiosity, the desire to ask, the ability to refute and ability estimates. Of particular interest to teachers is not suggesting a solution using only one method.
3. Mathematics as problem solving activities (problem solving). The implication of this view of learning is to provide mathematics learning environment that stimulates the emergence of mathematical problems, solving mathematics problems using his owns' way, and encourage students to think logically, consistent, systematic and develop a system of documentation / records.
4. Mathematics as a means of communicating. The implication of this view of learning are encourage students know the nature of mathematics, encourage students to make an example the nature of mathematics, encourage students to explain the nature of mathematics, encourage students to give reason the need for math activities, encourage students to discuss issues mathematics, and encourage students to read and write mathematics, respect students' mother tongue in talking about mathematics.

The implementation of primary mathematics curriculum in class-room will develop pupils' problem solving skills covering both closed and open problems. In

solving the problem, pupils need to develop creatively many ways and alternatives, to develop mathematical models, and to estimate the results.

## **5. DISCUSSION**

Stakeholders, especially government, should have a direct interest in seeking to better cope with the needs of youngest members of society for enhanced and financial capability and risk awareness through financial education. On the other hand, the definition and the aims of teaching learning of mathematics in primary curriculum ask pupils to think logically, analytically, systematically, critically, creatively, and be able to collaborate with others. Those competencies are needed for pupils thus they can get, access, and employ information to preserve their live. It was also suggested that in teaching learning of primary mathematics, pupils should have the chances to identify mathematics problems contextually and realistically (Freudenthal, 1991). Contextual and realistic approaches are recommended to be developed by the teachers to encourage mathematical thinking in schools. With these approaches, there is a hope that the pupils' step-by-step learns and master mathematics enthusiastically. Collateral with those points of view, government can design financial education for primary school student through mathematics lesson by developing curriculum of mathematics which embeds financial understanding, financial competencies, and financial responsibility as its competencies.

Teachers are can develop pupils' financial capability through daily primary mathematics lesson by employing optimally the environment to support pupils' activities. In example, pupils can learn to how to manage money which are looking after money, spending money and budgeting, in the scope of numbers and analyzing data. Pupils can also learn basic concepts of risk and return in the scope of introduction to probability and analyzing data.

## **6. CONCLUSION AND SUGGESTION**

Insurance awareness should be built due to its important role in the economy. Financial education in early age is one of many ways which can be taken to build the insurance awareness. Therefore, it is important that the government embed financial capability more explicitly in the school curriculum by developing the new competencies

standard of mathematics study. In addition, teachers should be provided with the support and resource in form of teaching material they need to give them the confidence and competence to teach good finance education in school.

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