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A Literature Review of Financing the Tertiary Education In Indonesia

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Abstract —This article was written to review three financial journals in higher education. The evaluation of this article aims to identify the strengths and weaknesses contained in these three articles. Higher Education Financing is one of the issues related to many countries, and this is related to inclusive education, namely education for all people. As a large country with a vast population, Indonesia is faced with the obligation to provide the right to education for all Indonesian citizens. The three journals' results must be that the government actively runs work schemes for students and support private universities so that the number of education participation can increase significantly.

Keywords—Financing Tertiary education, ICL, Mortgage, Literature Review

I. INTRODUCTION

Elmira &Suryadarma (2019) tested a contingent loan system's feasibility from income to finance higher education in Indonesia. Using graduate income data obtained from the 2015 National Labor Force Survey, we model the lifecycle income distribution of university graduates and use quantitative regression. We use these estimates to simulate various income-contingent loan (ICL) schemes to observe their effect on repayment amounts. , length of repayment, government subsidies, and the burden of repaying men and women in different amounts of income. We simulated three loan schemes: no real interest, with an additional fee of 25% of the total loan, and with a real interest of 2%. The government has the lowest implicit subsidy, with a 25% surcharge scheme. The results show that ICL with a lower payment burden is feasible in Indonesia and can improve higher education access. We also discuss administrative capacity among tax authorities.

Meanwhile, Chapman & Doris (2018) tested the feasibility of various alternative student loan schemes for Ireland. Using extensive data derived from an employer survey, we model the distribution of life cycle earnings for Irish graduates. We then use these estimates to simulate the effects of alternative types of student loans, including mortgage-type loans and income-contingent loans of various designs, incorporating participation and migration patterns into the simulation. The results show that mortgage-type loans require unsustainably high rates of return for low-income graduates. Through the specifications of several alternative income-contingent loan schemes, it appears that this higher education financing approach is feasible both in terms of outreach by graduates and regarding government subsidies within it. Several issues in loading policies must be addressed, and we conclude with some recommendations for future Irish schemes.

Kim & Park (2018) stated that since 2005, total expenditure on Korean higher education has increased. However, financial support is weak compared to financial support for K-12 education. This paper first describes the current situation and financial support issues for higher education and then suggests policy implications. There are nine barriers to obtaining university funding in Korea: instability, small budget allocations, overlapping investment by the central government, inconsistencies in program promotion, linkages with structural reform universities, imbalance in financial support, uncertainty in the prediction of financial support, the very financial structure of private universities. Depending on tuition fees and various causes of increases in tuition fees. Here are some possibilities to solve university financial problems and get financial support from the government: Higher Education Grant Financing, higher education taxes, funding formulas, local college support, private college support, and consumer-oriented financial support. Program directions driven by state subsidies can be categorized as follows: financial support that takes into account the factors of equity and excellence, integrated administration of government support funds, reduced program support, then operational cost support for private universities, and sharing financial support for private universities by adjusting the financial condition of the college. The main tasks to solve the financial structure problem in Korean higher education are high dependence on private institutions, high dependence on school fees, and minimum investment rules issued by the government. There should be further discussion about the high dependence on private resources for financing a university education.

Background

Countries in all parts of the world are in a competition where in the future countries with superior human resources will increase their economic equity. A study conducted by Belfield, Britton, Dearden, and van der Erve (2017) states that Education Reform in the UK makes loan payments easier and the burden of repayment lighter. The relationship between the economy of education and the labor economy is one of the hottest topics that has been widely researched. The state budget is in a long-term perspective where the economic narrative is now centered on how a country keeps its workforce competitive over the long term.In their study, Dearden, Lorraine (2018) explains that a dynamic loan and income system is correlated where the ending point is the loss of some risk of default.

Another exciting thing is that by using the ICL scheme, the government can indirectly make the industry index increase and the many graduates who are fit for work. Armstrong, Dearden, Kobayashi, & Nagase (2019) write that in Japan, there is evidence to strengthen that at certain stages, students with the ICL scheme can repay their loans more quickly and allow assistance in the form of voluntary loans to other prospective students. This loan scheme will accelerate the acceleration of the development of a competitive workforce and qualified human resources.

II. LITERATURE REVIEW

The higher education system has several characteristics that must be considered in student loans (Chapman and Doris 2018). This system also applies to the Indonesian context. First, we have to look at the strange phenomenon of higher education in Indonesia, where only 55% of people receive tertiary education, according to Ristekdikti (2016). This number implies that the return on tertiary tuition fees may not be high enough to allow graduates to repay their loans. Second, students who drop out of school may not be able to pay back the tuition fees. Third, returns to tertiary education are not constant over time, making calculating potential defaults to some degree very difficult to quantify. These characteristics pose risks that may deter prospective students. This thing is the main reason that, in most countries, the government bears this risk.

The concept of an income-contingent loan (ICL)

An important feature that differentiates ICL from a mortgage type loan is that borrowers are expected to start repaying their loan once their income reaches a predetermined amount at the threshold, with the RB (financing expense) set at a relatively low proportion of income. When income is low, the payment amount is

meager. The repayment amount increases as revenue increases. This feature, which follows a productive age profile, will streamline the payment process, enabling more people, including those from disadvantaged families, to participate in higher education. The two main advantages of implementing ICL are default protection through the government, namely subsidies and guarantees and smooth consumption due to lower RB. Some countries have a 25-30 year time limit on the loan repayment life cycle, meaning that the loan will be written off if the time limit is exceeded.

According to Chapman, 2018 ICL is more effective because Mortgage-type loans for tuition and income allowances are available to students based on tests on family income in several countries, including the US, Canada, and Japan have a shortage of Public sector support usually (for example, in Canada) takes two forms: interest payments on debts before a student graduates; and guarantees of repayment of debts to the bank in the event of default. Such arrangements are designed to facilitate commercial lenders' involvement by addressing the risks they face in this market. However, mortgage-type loans pose problems for borrowers because loans requiring repayment on a time basis rather than the ability to repay are insensitive to individual financial circumstances and are associated with default risk and the prospect of financial difficulties. Default causes damage to the graduate's credit reputation and the eligibility of other loans such as for the home mortgage (Chapman, 2018). Thus in anticipation of a potential loss of credit reputation, some prospective students may choose to avoid the risk of loan default**.**

Government Support for Education Operators.

State subsidy programs for tertiary institutions can be categorized into two types based on support units: institute-based and program-based. Institution-based support is used to build infrastructure or to encourage the formation of special programs for universities. This type is the support provided by using the method of allocating funds to the total budget. Program-based support is provided to incentivize these institutions to specialize and strengthen in a particular area. Such support also has characteristics that reinforce autonomy and obligation. Examples are the program for specialization (university specialization program) and the Leader in Industrial-University Cooperation. However, critics claim that because the program team is operated for a limited time for a specific purpose, the program's results cannot be achieved continuously when state subsidies end. State subsidized programs for universities are divided into three types for their intended use: operational costs of public universities and private colleges, student scholarships, and programs for particular purposes. The Ministry of Education has supported the university financially by program team units. In other words, government files have used the public offering method to drive change and innovation for government-centric universities. The government has used an 'apply-select-evaluation' process to strengthen evaluation and competing structures, and this support has also been used to restructure the university. Policies at the university that rely on higher-level state subsidy programs are continually changing along with the government's evaluation index. This means that the state subsidy program serves as financial support and a critical factor for school management. The current government is also using the program to re-enforce universities' role that embraces industrial demands and rapid social change.

III. METHOD

The method used in this study is a literature review or literature study. The author will compare the results, assess journals' contribution to higher education financing, and identify the limitations or shortcomings of the selected journal journals.

Author	Title	Method
Elmira &Suryadarma (2019)	Financing tertiary education in Indonesia: assessing the feasibility of an income-contingent loan system	Quantitative; Pricing Model
Chapman & Doris (2018)	Modeling Higher Education Financing Reform for Ireland	Quantitative: Pricing model
Kim & Park (2017)	Lessons learned from financing universal higher education in Korea	Kualitatif

The method used by Elmira &Surydarma (2019) is to form a pricing model to estimate income after graduation. Elmira Elmira&Surydaarma (2019) state that income and work dynamics need to be combined to obtain an accurate estimate of life cycle income. The limitation of the study is that there is no Indonesian data set that meets these two requirements. The only panel is the dataset available, the Indonesian Family Life Survey, with surveys in 1993, 1997, 2000,2007, and 2014. However, the sample size is too small to allow for dynamic estimates of lifetime income; therefore, in this paper, Elmira &Surydarma (2019) estimate that conditional quantitative regression is the right model to measure this ICL scheme.

Meanwhile, Chapman & Doris (2018) used an alternative scheme analysis, namely modeling life cycle income throughout Ireland by utilizing graduate income distribution using the Unconditional Quantile Regression and 2006 data from the National Labor Survey (NES). The NES collects payroll records on earnings and hours worked from a large sample of companies with three or more employees. The sample size is selected by counting the number of firms registered in each sector and size class. This payroll data is supplemented by information on the sample's characteristics of those employed by each company surveyed. The sample size used by 67,700 employees at 4,800 companies was surveyed, including about 8,500 graduating Irish people aged 25-55.

Kim & Park (2017) use secondary data and analyze it where the data used is data obtained from related ministries and statistical data centers. State subsidy programs must consider equity and advantage. For guaranteed equity, all universities must be evaluated based on their quality and improve management and support them in mentoring them with what is lacking. Financial support is required when considering the poor conditions of university education. Upgrading some of the best universities is essential, but helping lagging universities and improving universities' overall quality level is also essential. If the government limits support for specific purposes, universities will reduce or eliminate their budget items.

IV. FINDINGS

This study has several main findings regarding student loan modeling using the ICL scheme. First, ICL with a lower RB (Repayment Burden) can reduce or even eliminate default (risk of default). Both governments must provide subsidies for student loans, with amounts that adjust to the ICL scheme type being applied. However, the subsidy is undoubtedly smaller than the full subsidy that the government must provide if it provides scholarships or eliminates tuition fees. In this study, modeling the 25% surcharge will result in smaller implicit subsidies, even though the repayment period is more extended than the scheme using a real zero or 2% interest rate and at no additional cost. Third, women, especially those earning at the Q25 level, pay off debt more slowly than men and have higher implicit subsidies than men. These results reflect the experience that female graduates' earnings have increased more slowly than men and require higher subsidies from the government to repay their loans.

Based on the analysis, a 25% surcharge scheme is the best option for the government and students. First, compared to other schemes, adding a 25% surcharge would reduce the implicit subsidy given to most borrowers, which would benefit the government. Among men, this scheme requires the least amount of subsidies. Second, this option is not regressive. Those on lower incomes do not have to pay more in real terms than those on higher incomes. Finally, the surcharge scheme is more straightforward to operate than the 2% real interest scheme,

advantageous given the Indonesian tax office's growing capacity. This loan scheme is a characteristic of a targeted program considering the level of payment burden.

Another critical discussion is that the ICL system requires reliable lifetime income. Documentation is more feasible for graduates working in the formal sector or in a context where most self-employed persons report income.

As the first simulation of the ICL system in Indonesia, this study has several limiting factors that must be addressed in the future, more detailed studies. First, we have not to Include universities and majors, which significantly affect the total cost of education. For example, degrees in health and science have significantly higher costs due to reliance on laboratory and practical activities. However, they also have the potential for higher income in the future, and the government may want to provide additional subsidies to attract students to study more in the desired course of study. Second, our simulations do not consider the likelihood that ICL will affect tertiary education sustainability because of restraint or burden.ICL is more likely than a mortgage type loan. There are many ways in which ICL can be implemented, but they should all guarantee a smaller RB and financial protection in the difficult times that graduates will face.

The government has a vital role in financing higher education. The market system no longer provides efficient loan schemes due to moral hazard and adverse loan selection options, and then the ICL scheme must be able to provide a form of social security. I think that the education financing scheme will influence welfare. This study's main contribution is to evaluate higher education financing based on the price and quantity effects of debt. When we ignore the externalities of money, the education system stagnates. These articles also contribute to identifying government interventions in higher education that can improve welfare and reduce inequality. This contribution can be broken down into four findings—first, the tuition loan scheme. If the cost of financing education is lower, and the length of study time can be shortened, then the subsidy for tuition fees or student loans can reduce funding totality. This means that if education is relatively easy to achieve, education investment can be expanded through government intervention. When education costs are calibrated with realistic values, the government guaranteed income-contingent loan (ICL), and tuition fee subsidies are the best options from the models or schemes considered to finance higher education; second, this study shows the difference in policy means, comparing the conditions Korea, Indonesia and Ireland may not be straight apple to apple, but we can see the transition costs have to be taken into account. Third, the balanced budget tax rate could be higher in systems that rely on contingent student loan income. Fourth, public financing of tertiary education only increases inequality if government support for education is deficient; if these costs increase, the level of inequality will fall as public sector support increases.

V. CONCLUSION

Financing for higher education is an urgent issue that must be resolved because it is related to inclusive education leadership. The state's presence as a regulator that guarantees the right to education for anyone is highly questionable. For developing countries investing in human capital is one way to increase socio-economic welfare. Therefore, financing higher education should be the country's main agenda, especially for education providers who will benefit from many students. It will be very suitable for completes the triple helix theory's dialectic where the government, universities, and the public get so many benefits from the Higher

Education financing loan program. Society becomes more educative than before, universities will continue to live and innovate, and the government can enjoy demographic bonuses that have competence.

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