

## การวิเคราะห์ความยากลำบากในการชำระหนี้ของกองทุนเงินให้กู้ยืมเพื่อการศึกษา

### Repayment Hardship Analysis of Thailand's Student Loan Fund

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### บทคัดย่อ

การวิจัยครั้งนี้ใช้ข้อมูลอายุและรายได้ของผู้กู้ยืมเงินเพื่อการศึกษาในระดับปริญญาตรีในการวิเคราะห์ความยากลำบากในการชำระหนี้ โดยพิจารณาเปรียบเทียบหลักเกณฑ์การชำระหนี้ของกองทุนเงินให้กู้ยืมเพื่อการศึกษาในปัจจุบันและหลักเกณฑ์การชำระหนี้ที่ผู้วิจัยนำเสนออีก 3 หลักเกณฑ์ ซึ่งผู้วิจัยตั้งสมมติฐานเกี่ยวกับระยะเวลาปลดหนี้ของการคิดดอกเบี้ยและของการจ่ายคืนเงินต้น รวมทั้งอัตราดอกเบี้ยเงินกู้ที่แตกต่างจากหลักเกณฑ์ในปัจจุบัน ผู้วิจัยพบว่าภายใต้เงื่อนไขการชำระหนี้ในปัจจุบัน ความยากลำบากในการชำระหนี้โดยเฉลี่ยของผู้สำเร็จการศึกษาระดับปริญญาตรีซึ่งวัดจากอัตราส่วนของเงินชำระหนี้ต่อรายได้ทั้งหมด อยู่ที่ประมาณร้อยละ 4 ในขณะที่ความยากลำบากในการชำระหนี้ของผู้สำเร็จการศึกษาระดับปริญญาตรีและมีรายได้ต่ำในช่วงเปอร์เซ็นต์ที่ 10 มีค่าสูงกว่า คิดเป็น 3 เท่า ในขณะที่ภายใต้หลักเกณฑ์ใหม่ ซึ่งไม่มีระยะเวลาปลดหนี้และอัตราดอกเบี้ยเป็นร้อยละ 7 โดยเฉลี่ยแล้วความยากลำบากในการชำระหนี้ของผู้สำเร็จการศึกษาระดับปริญญาตรีเพิ่มขึ้นเกือบสามเท่า และความยากลำบากในการชำระหนี้ของผู้สำเร็จการศึกษาระดับปริญญาตรีและมีรายได้ต่ำในช่วงเปอร์เซ็นต์ที่ 10 เพิ่มขึ้นมากกว่าสองเท่า

### Abstract

Using the age-earnings profiles of the Student Loans Fund (SLF) borrowers, we analyze the repayment hardship for the undergraduate level. The current SLF is compared with our three proposed SLF schemes. We assume different grace periods of interest charge and loan repayment, and a 7% nominal interest rate, instead of 1%, for all schemes. Under the current SLF, average repayment hardship (as measured by the ratio of total repayment to total income) of average graduates is roughly 4% of total income, while that of unlucky graduates (i.e. graduates whose income is in the bottom 10%) is three times as much. In case of the radically modified SLF scheme, of which all government subsidies are eliminated, the average repayment hardship of average graduates increases almost three times. As for unlucky graduates, their average repayment hardship raises more than two times.

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## 1. Introduction

Human capital is important for social and economic development. One most sensible way to enhance the quality of a country's human capital is to promote education. However, in developing countries, the access to education, especially high educational levels, is limited because a large number of populations are poor. Therefore, the government has to play an important role in establishing a student loans scheme to reduce inequality of education, which will eventually increase the country's economic growth.

From the point of view of the government, as a loan provider, some key issues regarding a student loans scheme are loan allocation and distribution, recovery, collection and administration, and repayment conditions.<sup>4</sup> The government also needs to be concerned about an efficiency of resource allocation to the student loans scheme. From the point of view of loan borrowers, although they receive an opportunity

to access to higher education and earn higher income, required loan repayment with strict conditions may increase the borrowers' repayment hardship. These issues lead to the tradeoff between the government's subsidy and the borrowers' repayment difficulties.

Previous studies have investigated student loans schemes in many countries, for example, in Australia (Chapman and Ryan, 2002; Chapman, 2006), Europe and the US (Johnstone, 1986), Africa (Johnstone and Amero, 2001; Johnstone, 2004), and South East Asia (Ziderman, 2003 and 2004).<sup>5</sup> This study is to fully analyze the repayment hardship of the Student Loans Fund (SLF) recipients in Thailand at the undergraduate level. As far as we are concerned, this study is the first to analyze the repayment hardship the SLF's borrowers. Our study empirically investigates the repayment hardship of a loan recipient throughout the repayment period, using the proportion of total payment to total income.

<sup>4</sup>Loan repayment conditions refer to interest charges and repayment schedule.

<sup>5</sup>Although Thailand's student loans cover upper secondary, vocational and undergraduate education, most student loans schemes over the world cover only higher education (Ziderman, 2003). Therefore, in this paper our analysis will be based on higher education.

## 2. How the SLF works

### *Loan budget allocation and loan distribution*

In each fiscal year, the SLF will estimate the total amount of funds needed for loan distribution in that year, and submit a request to Bureau of the Budget, Thailand. The annual allocated budget of the SLF will then be divided into (1) the loan budget for upper secondary and vocational education, and (2) the loan budget for undergraduate education. To our focus, the loan budget for undergraduate education will be allocated directly to each university, through the Commission on Higher Education (formerly the Ministry of University Affairs). The loan budget allocated to a university is based on the number of loan recipients in the previous years. At the institutional level, the university's loan committee authorizes the distribution of the loan budget to eligible students and oversees the process of loan applications. Within the limitation set by the Commission on Higher Education, a university makes the decision on individual loans distributed to its students.

The SLF loans cover tuition fees and educational related expenses, as well as living allowance during a studying period. For the undergraduate level, which is the focus of our analysis, the loan ceiling for a tuition fee and educational related expenses are set differently, depending on the field of study, ranging from 60,000 baht to 150,000 baht per year. The living allowance loan, including accommodation and personal expenses, is limited to 24,000 baht per year.<sup>6</sup>

### *Loan repayment*

Since the SLF loans are provided to students from low-income families, the conditions for interest charge and principal repayment have been set to lessen debtors' burden. First, there is a seven-year interest charged grace period between the first enrollment and the first debt repayment. Second, there is a two-year repayment grace period after a loan recipient graduates or stops borrowing. Following the two-year grace period, the loan recipient is required to repay his or her debt for 15 years.<sup>7</sup> Third, a

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<sup>6</sup>Source: Office of Student Loans Fund's website ([www.studentloan.or.th](http://www.studentloan.or.th)).

<sup>7</sup>A loan recipient may choose to start repaying his or her debt during the two-year grace period. Also, a loan recipient may choose to pay off the debt in less than 15 years.

flat interest rate of only 1 % per annum is charged throughout the repayment period. The annual loan repayment is calculated as the proportion of total loan, ranging from 1.5% in Year 1 to 13% in Year 15.<sup>8</sup> It seems that the SLF loans have the potential to provide “consumption smoothing”, meaning that the proportion of loan repayment grows with the borrower’s expected earnings. Fourth, if a loan recipient is unemployed or encounters a natural disaster, riot, or war, he or she can apply for a six-month suspension, but in total not more than two years. If a loan recipient’s income falls below the threshold income of 4,700 baht per month, he or she can request not to pay the total amount of required payment. In this case, the borrower has to pay a minimum of 300 baht per month or 2,400 baht per year, and it has to be higher than the interest charged for that repayment period. If a loan recipient fails to repay his or her debt, he or she will face the penalty between 12% and 18% of the installment principal. Finally, upon a loan recipient’s decease or disability to work, the loan will be automatically forgiven.

### *Loan collection*

Krung Thai Bank (KTB), a government-owned bank, is responsible for the SLF loan collection. Once the two-year repayment grace period ends, due borrowers are required to contact KTB to arrange the loan repayment by the 5<sup>th</sup> of July in that year. The borrowers have two choices in paying back the debt. First, they may pay the total due amount for the particular period. Second, they may apply for an installment of 12 monthly payments. During 15 years of the loan repayment period, KTB will inform due borrowers of the amounts to be paid one month prior to the due date, i.e., the 5<sup>th</sup> of July. Again, the borrowers have two choices to settle the repayment schedule for each particular year. If due borrowers fail to arrange the payment, follow-up by mail, telephone, and home visit will be made depending on the length of the delinquency period.

## 3. Repayment hardships

### 3.1 Data and methodology

#### 3.1.1 Age-earnings profile

To investigate the repayment hardship of loan recipients, we need the estimated future

<sup>8</sup>However, a loan recipient can choose to repay the debt more or faster than what is specified in the repayment

income of the loan recipients. We use the age-earnings profile of average Thais with an undergraduate degree provided by Chapman and Luonkaew (2008). They construct the age-earnings profile of Thai graduates using data from the 2006 Labor Force Survey conducted by the National Statistical Office. The sample is classified into female and male graduates. Their income is measured as wages from their main jobs with a minimum of 20 working hours per week. The estimated income of average graduates is constructed based on the Ordinary Least Square (OLS), which is regressed by potential experience (as a quadratic) and education background.<sup>9</sup>

Moreover, to examine how the repayment hardship of loan recipients under the SLF

scheme will be different when the loan recipients earn much lower than the average, we use the age-earnings profile of graduates whose income is in the bottom 10%, i.e., unlucky graduates. To calculate the estimated future income of unlucky graduates, we also use the same regression model as that of average graduates. The minimum earning of unlucky female graduates is 12,500 baht, but on average they earn 75,994.96 baht. As for unlucky male graduates, their average income is 78,972.62 baht, which is higher than that of female ones.

The age-earnings profile over a period of working life of average female and male graduates and that of unlucky female and male graduates are shown in Figure 1 and Figure 2, respectively.

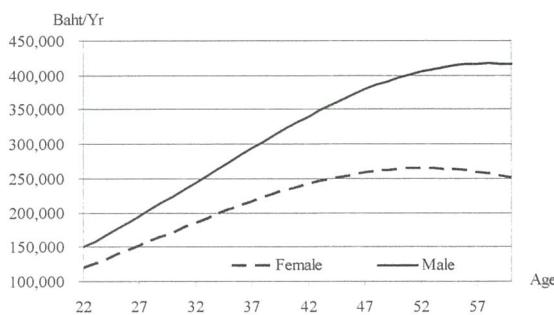


Figure 1: Age-Earnings profile of average graduates

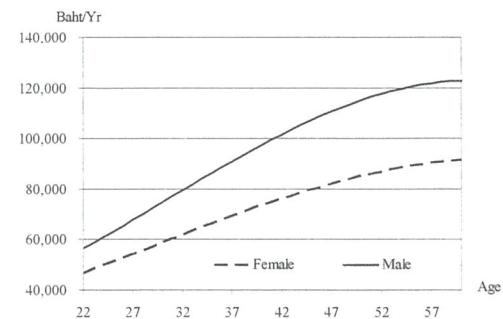


Figure 2: Age-Earnings profile of unlucky graduates

<sup>9</sup>There is a possible unemployment issue. However, it is probably not very serious because the average unemployment rate of female and male graduates during the 15-year repayment period is only around 8% and 4%, respectively.

To calculate the repayment hardship, there are four sub-samples in our analysis, i.e. average female graduates, average male graduates, unlucky female graduates and unlucky male graduates. The repayment hardship is calculated as below.

$$\text{Repayment hardship} = \frac{\text{Total loan repayment}}{\text{Total income}}$$

The total loan repayment of each period is adjusted to a real term, using the inflation rate of 4% and total income, estimated by the regression model, is in a real term.<sup>10</sup>

### 3.1.2 Repayment conditions of the current SLF

The nominal interest rate charged to current SLF loans is fixed at 1% until the loans are fully paid. The 1% interest rate assists loan recipients to bear a very low cost of their education because it is much lower than market interest rates. Currently, the term deposit interest rate of the Government Saving Bank is 3% and the interest rate of long-term government bonds is 5%.<sup>11</sup> It means that the government has to subsidize the SLF at least about 2-3% over the

15-year repayment schedule.

Furthermore, the 1% interest rate charged highly affects the present value of repayment in the future. Assuming that an average inflation rate is 4%, the government subsidizes loan recipients about 3%. The amount of repayment reduces through time at a real rate of 3%. When the total loans, charged with 1% interest rate, are fully paid after 21 years (4-year course of study, 2-year grace period and 15-year repayment period), the government would receive much lesser amount of money in real term.

In addition, the SLF allows loan recipients to start loan repayment two years after their graduation. The two-year grace period of repayment benefits loan recipients, but increases the government subsidy. Moreover, since the loan application date, the borrowers are not obliged to pay interest, or to make a repayment for seven years, meaning that the government has to bear a high cost of lending for the seven-year interest grace period. In addition to this, the SLF allows the borrowers to postpone their repayment in a total period of two years if they are unemployed or face a natural disaster, riot, or war.

<sup>10</sup>The calculation of repayment hardship in this article is based on the actual repayment practice of SLF, which is slightly different from the results of Polsiri, Sarachitti and Sitthipongpanich (2008).

<sup>11</sup>Bank of Thailand as of May 2008 ([www.bot.or.th](http://www.bot.or.th))

### 3.2 Analysis

We calculate the average repayment hardship over the 15-year repayment period of average female and male graduates as well as

unlucky female and male graduates under the four different SLF schemes, comparing between the current scheme and our Three proposed schemes. The results are presented in Table 1.

Table 1: Average repayment hardships (%)

Schemes	Interest rate of 1%				Interest rate of 7% <sup>c</sup>			
	Average		Unlucky		Average		Unlucky	
	Female	Male	Female	Male	Female	Male	Female	Male
2 Rep, 3 Int <sup>a</sup>	4.37	3.61	12.96	10.12	7.15	5.97	20.97	16.46
0 Rep, 3 Int <sup>b</sup>	4.74	3.92	14.79	11.68	7.76	6.48	23.97	19.04
2 Rep, 0 Int <sup>c</sup>	4.65	3.85	13.77	10.76	10.13	8.51	29.50	23.23
0 Rep, 0 Int <sup>d</sup>	5.33	4.51	15.41	12.18	10.64	9.15	30.15	24.02

<sup>a</sup>2 Rep, 3 Int refers to “Two-year repayment grace period and interest charged 3 years after graduation”.

<sup>b</sup>0 Rep, 3 Int refers to “No repayment grace period and interest charged 3 years after graduation”.

<sup>c</sup>2 Rep, 0 Int refers to “Two-year repayment grace period and interest charged on enrollment”.

<sup>d</sup>0 Rep, 0 Int refers to “No repayment grace period and interest charged on enrollment”.

<sup>e</sup> The nominal interest rate of 7% is equivalent to a real rate of interest of 3%, given that the inflation rate is 4%. If the government’s cost of borrowing is 3%, this interest subsidy will be removed.

As expected, under the current SLF scheme (2 Rep, 3 Int with the interest rate of 1 %), the average repayment hardship of the borrowers is the lowest among all schemes. Even for unlucky female graduates, the average repayment hardship is only as high as 12.96%. The current SLF is considered generous, because the government subsidizes a large portion of the loan in terms of a very low interest rate of

1%, a two-year grace period of loan repayment, and a seven-year grace period of interest charged.

Compared with the current SLF, when we change the repayment grace period from two years to zero (0 Rep, 3 Int with the interest rate of 1 %), the average repayment hardship increases only less than 1 % for all sub-samples. The result also holds when adjusting the grace

period of interest charged from seven years to zero (*2 Rep, 0 Int* with the interest rate of 1%). These findings indicate that under the low interest rate regime, a change in the grace period conditions does not really affect the repayment hardship.

When we design a comparison SLF by changing the interest rate from 1% to 7% (*2 Rep, 3 Int* with the interest rate of 7%), the average repayment hardship of average graduates increases roughly by 2-3%. Differently, the average repayment hardship of unlucky graduates increases around 6-8%.

When we remove all forms of subsidization by the following changes; 1) the interest rate increases from 1% to 7%, 2) there is no grace period for loan repayment, and 3) the interest is charged on enrollment. Table 1 shows that the average repayment hardship under this radically modified SLF scheme (*0 Rep, 0 Int* with the interest rate of 7%) is as twice as much for all sub-samples, compared with the current SLF scheme. More precisely, the average repayment hardship increases from 4.37% and 3.61%, to 10.64% and 9.15% for average female and male graduates, respectively. As for unlucky female and male graduates, the average repayment hardship increases from 12.96% and

10.12%, to 30.15% and 24.02%, respectively. These findings show that for unlucky graduates, if the government decides to reduce the subsidy for student loans, they may have to pay as high as one-fourth of their income for the loan, on average.

We then compare the repayment hardship over the 15-year repayment period of the current SLF and the radically modified SLF scheme (*0 Rep, 0 Int* with the interest rate of 7%) for all sub-samples. Figure 3 shows that under the current SLF scheme, an average female graduate pays as low as 1.77% of her income to the SLF at the beginning of the repayment period because the SLF does not charge interest in the first year of repayment. When the interest is charged to her loan in the second year of the repayment period, the repayment hardship increases more than doubled to 3.77%. Then, the proportion of repayment to income gradually increases before it reaches the highest at 5.22% at the end of the repayment period. Similarly, for an average male borrower, the proportion of loan repayment to income increases from 1.6% in the first year to 3.35% in the second year. The maximum repayment hardship of average male graduates is about 4.1% in the last three repayment years.

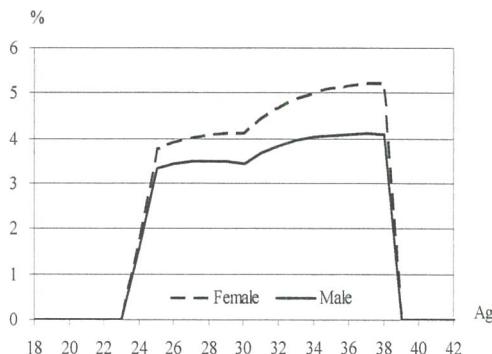


Figure 3: Proportion of total payment to total income of average graduates (Current SLF)

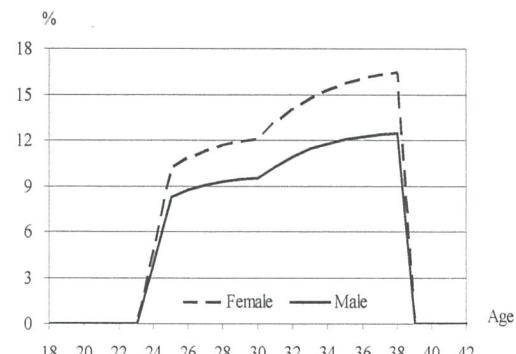


Figure 4: Proportion of total payment to total income of unlucky graduates (Current SLF)

Figure 4 shows the repayment hardship of unlucky graduates over the repayment period. Compared with that of average graduates, the proportion of repayment to income of unlucky graduates is much higher. More precisely, the proportion of loan repayment to income is the lowest at 4.72% and 3.86% in the first year of repayment, and it then rises to 10.22% and 8.3% in the second year for unlucky male and female graduates, respectively. Unlucky graduates are in the most difficulties in the last year of repayment. Specifically, the repayment hardship is 16.4% and 12.44% for unlucky female and male graduates, respectively.

The proposed SLF scheme that charges 7% interest rate on enrollment and requires the borrowers to pay immediately after graduation demonstrates a different pattern of repayment

hardship, compared to the current SLF. The interest charged on enrollment has a strong impact on the repayment hardship of borrowers at the beginning of repayment period. Tendency of the role of the interest goes down over the repayment period because the size of principal is getting smaller. Therefore, the proportion of total loan repayment to total income is reducing overtime under this proposed SLF scheme. Moreover, as expected, the repayment hardship is higher under the modified scheme than the current scheme.

Considering the case of average borrowers, Figure 5 shows that at the start of the repayment period, an average female borrower pays 14.19% of her income as the principal plus interest charge of the loan. The proportion increases to 14.29%, which is the highest, at the second

year of the repayment period. Then it declines gradually to the lowest of 7.43% at the end of the repayment period. The result also holds for an average male borrower. Nevertheless, the

repayment hardship of a male borrower is around 1-1.5% lower than that of a female borrower.

Similar to Figure 5, the repayment hard-

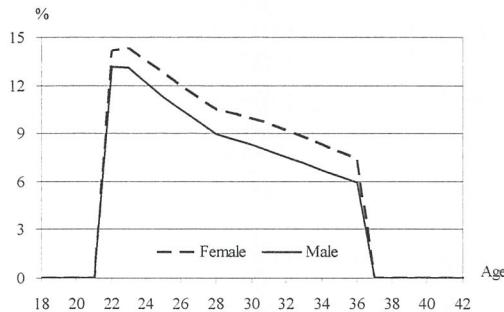


Figure 5: Proportion of total payment to total income of average graduates (Modified SLF)

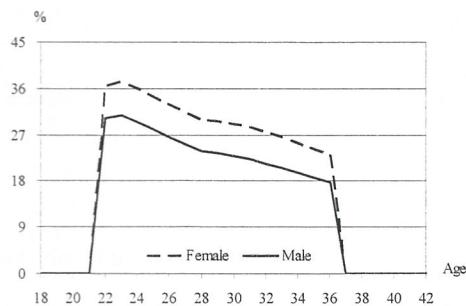


Figure 6: Proportion of total payment to total income of unlucky graduates (Modified SLF)

ship of unlucky borrowers is shown in Figure 6. However, the proportion of repayment to income of unlucky borrowers is substantially greater than that of average ones. Specifically, the proportion peaks at 37.31% and 30.75% for unlucky female and male graduates, respectively, in the 2<sup>nd</sup> year of the repayment period. Subsequently, it declines to the lowest at 23.1% and 17.65% for female and male graduates, respectively, at the end of the repayment period.

#### 4. Conclusion

We analyze the repayment hardship of student loan borrowers in Thailand for the undergraduate level. We compare the current SLF with three alternative SLF schemes, assuming different grace periods of interest charge and loan repayment. In addition, we assume a 7% nominal interest rate, instead of 1%, for all schemes. This 7% rate is to make the real interest rate of the SLF loan equivalent to the discount rate we use in the analysis.

Under the current SLF, average repayment hardship of average female and male graduates is 4.37% and 3.61%, respectively, while that of unlucky female and male graduates is 12.96% and 10.12% respectively. Assuming that the interest rate increases to 7% and the grace periods of interest charge and loan repayment are eliminated, the average repayment hardship of average female graduates increases by about 6%. Under the same conditions, the average repayment hardship of unlucky female graduates raises by about 17%, compared to average female graduates. In case

of male graduates, the average repayment hardship of the average ones and unlucky ones increases by approximately 2% and 11%, respectively.

To sum up, the current SLF seems to be generous in terms of repayment hardship for the borrowers. Nevertheless, if all forms of the government's subsidy are taken away, i.e. the nominal interest rate increases and there are no grace periods of repayment and interest charge, unlucky graduates will be in difficulty in paying back the loan.

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