



## Modelling Malaysian graduates' income profiles: An attempt to understand repayment burden in PTPTN loan

### Problem Statement

- Despite high government subsidies, **ONLY 50% RECOVERY RATE IS CRITICAL** to PTPTN sustainability.
- About half who are defaulting were earning less than RM 2000 per month (PTPTN internal study by Jan, 2020) – this suggests **LOW-INCOME COULD NOT AFFORD**.
- Critically, when PTPTN borrowers default, it impacts their credit reputation.
- Trend of government incentives including discounts and deferment of repayment is **HOWEVER TEMPORARY AND ARGUABLY COSTLY**.
- A substantial 71% of graduates with outstanding due loans are **MORE THAN ONE YEAR LATE IN THEIR REPAYMENTS** suggests that they face **DIFFICULTY TO REPAY** (PTPTN Annual Report, 2019).
- Without addressing the real problem of non-repayments associated with borrowers facing **FINANCIAL HARSHIP**, the already poor PTPTN repayment performance and constraints in fiscal budgets would result in increased defaults, and thus, a **SIGNIFICANT REDUCTION** in the funding and financing available to prospective higher education students.

### Research Objectives

1. To estimate lifetime income profiles of bachelor degree graduates by gender.
2. Using the simulated income - to examine the extent of variability in repayment burden (RB) for individual borrowers across the income distribution in PTPTN and study the implications to loan delinquency.



### Data and

### Methodology

Data: Malaysia Wages and Salaries Survey (WSS), Graduates Statistics, Labour Force Survey and economic data.

### Methodology:

Non-parametric and parametric model were applied onto the cross-sectional WSS to estimate the income profile of graduates.

### **THE MEASURE**

**OF RB** at an individual level is given by the ratio of repayment to income in any period  $t$ .

### Results and Discussion

\*In RB calculation, since the loan repayment is fixed over the repayment period of the scheduled time-based PTPTN loan, **THE LOWER THE INCOME THE HIGHER THE RB** or the percentage of income to repay.

\*The implication of **HIGH OR EXCESSIVE RB** is that it results in **LOW DISPOSABLE INCOME**, and consequently translates into **CONSUMPTION HARSHIP**.

\*The unfortunate borrowers with zero income (or 100% or greater RB) due to unemployment will be **UNABLE TO REPAY**, and those facing interruption in employment or low income would face excessive RB which **LIKELY LEAD THEM TO DEFAULT**.

We found that **conditional quantile regression** is a straightforward application to age-specific raw income data and **meaningful to capture distribution of income**, hence employed to simulate income and subsequently, used to examine RB across income distribution.

Our results show the different impact of the scheduled repayments in the current time-based PTPTN loan across borrowers with different income levels. By gender, we found **female face a significantly higher RB**. Critically, borrowers with **zero income immediately default** and the **lowest earners disproportionately repay more** than the highest earners.