NIDA Graduate School of Development Economics
Working Paper Series No. ....

Income Recovery of Thai Workers from the COVID-19 Pandemic[1]

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13 September 2022

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Abstract

This paper examines how COVID-19 and the resultant lockdown affected Thai workers and how their income has recovered as of the end of 2020. We conducted three phases of telephone surveys in order to track the income dynamics of Thai workers during the months of May, August, and November 2020. The initial COVID-19 impact on Thai worker income was enormous and very broad. On average, Thai worker income fell by 47.03%, and 69.7% of workers suffered such a loss. Over the six-month period surveyed, most Thai workers had just begun to stabilize their income while only a few were actually able to recover. Quantile regression analysis revealed particular factors that influenced income recovery. For example, being a formal worker tended to help one's income to recover faster. Interestingly, COVID-19 assistance schemes from the government, while being essential to those in need, had a negative impact on income recovery. On the other hand, the cheap loan policy seems to have been more effective as workers whose incomes were in the middle and the top quantiles experienced faster income recovery.

Keywords: COVID-19, Economic Crises, Income Recovery, Quantile Regression

1 Introduction

We aim here to identify the characteristics of Thai workers who were able to recover their earnings from the first wave of the COVID-19 outbreak in 2020. Using panel data from surveys conducted in 2020, we employed quantile regression analysis to examine how workers in different income quantiles and work status recovered from the economic downturn and if any of the available government assistance was helpful in terms of boosting worker resilience during this time. Though a number of studies on this issue have been conducted in other countries—for instance, Cox (2020) in the US, Hacioglu, Kanzig, and Surico (2020) in the UK, and Qian and Fan (2020) in China—most were conducted in developed countries where a large number of workers are covered under social security systems that provide income insurance against economic uncertainty. But the majority (55%) of the Thai labor force are informal workers without any income insurance coverage. As a result, Thai informal workers might suffer much more from a severe economic downturn than their counterparts in developed countries and thus may need different financial assistance schemes for their income recovery. This study therefore aims to deepen our understanding of how vulnerable workers in Thailand have coped with the COVID-19 pandemic and which government assistance measures have been effective in supporting their income recovery.

The COVID-19 outbreak was first acknowledged in December 2019, when the Wuhan City Public Health Office of Hubei Province in the People's Republic of China issued an official announcement reporting that a pneumonia of an unknown cause but associated with a Wuhan seafood market had been identified. China and the World Health Organization (WHO) stated that the source was the SARS-CoV-2 virus, which was later called "COVID-19." On January 30, 2020, WHO declared the outbreak a Public Health Emergency of International Concern (PHEIC) as many confirmed cases were being reported around the world. The number of patients outside of China continued to rise sharply, and WHO eventually declared COVID-19 a "pandemic" on March 11, 2020.

For Thailand, the first infected person was reported on January 31,—taxi driver who had no record of traveling abroad but had provided taxi services for Chinese visitors infected with the virus. The Thai Ministry of Public Health then issued an announcement in the Government Gazette, effective from March 1, 2020, that COVID-19 was a dangerous communicable disease. On March 6, 2020, the first cluster of patients was found among those in attendance at a boxing stadium and entertainment venues in the capital city of Bangkok,

which led to a government announcement of a Bangkok lockdown, with a hope to preventing the spread of the COVID-19 disease. As a result, several venues that usually draw large crowds, resulting in close, congested contact among people, such as department stores, hotels and restaurants, sport stadiums, entertainment complexes, and so forth, were forced to close down. All this caused a huge migration of unemployed workers from the Bangkok metropolitan area. Some of these return migrants were no doubt infected already as they returned to their hometowns upcountry. Subsequently, beginning in mid-March 2020, infections throughout the country began to rapidly increase.

The Cabinet, at its meeting on March 10, 2020, resolved to establish the Centre for COVID-19 Situation Administration (CCSA), with the Prime Minister serving as chairperson of its executive committees. The CCSA issued numerous social distancing measures nationwide in order to prevent and curb the spread of COVID-19. And anyone traveling into Thailand was subject to a COVID-19 antigen test and a 14-day quarantine. Schools and other places where people tended to congregate were also locked down, everyone was required to wear hygienic face mask in public, and both public and private workers were encouraged to work from home. The CCSA also announced a curfew during the evening hours as well as many other social distancing measures. Even though these measures seemed to be effective in bringing down the number of COVID-19 infections as well as hospitalizations and deaths, they also brought with them severe economic hardships to many Thai households, an unprecedented rise in the number of workers absent from work or working reduced hours, and a significant number of jobs lost.

The health situation in Thailand seemed to be improving in May 2020, by which time the number of infections had dropped significantly, so the Thai government began to relax the lockdown regulations. By June 2020, almost all domestic economic activities had returned to just about normal although public health and social distancing measures remained in place, such as wearing facemasks in public, checking one's temperature and rubbing one's hands with alcohol before entering a building, limiting the number of people in enclosed areas (e.g., elevators and restaurants), and so on. But businesses such as nightclubs, boxing stadiums, wellness and spa establishments, etc. were not yet allowed to reopen. Given the contraction in demand for exports along with the cumbersome screening of all arrivals into Thailand, which brought an abrupt halt to tourism, business travel, shipping/importing, etc., the COVID-19 pandemic remained a crippling hindrance to any possible economic recovery in 2020. It is worth noting here that although the COVID-19 outbreak in Thailand seemed to be under control for a while in mid-2020, many workers were nonetheless unable to find a new job or

still had work at far fewer hours than before. Since household income no longer matched the level before COVID-19, it comes as no surprise that they were no longer able to maintain the same level of wellbeing as before. The situation became even worse at the beginning of December 2020 when the second wave of COVID-19 outbreak struck with the new variant Delta. This new wave of the COVID-19 epidemic originated with a large cluster of migrant workers in Samut Sakhon province, where immigrant workers tended to live together in crowded dormitories where strict public health measures were not enforced.

The Office of the National Economic and Social Development Council (NESDC) estimated that 8.4 million Thai workers were affected during the COVID-19 outbreak in Q2 and Q3 of 2020. This number is generally in line with the International Labor Organization's report (ILO 2020) of approximately six million or more workers in Thailand's tourism industry losing their jobs due to strict transmission control and social distancing measures. Likewise, the Labor Force Survey (LFS) conducted by the National Statistical Office (NSO 2020) during the same time period found that the unemployment rate in Thailand had increased to 2% in Q2 of 2020, more than triple the average 0.6% unemployment rate over the last decade.

In response to declining economic transactions and a GDP growth rate of -6.2% in 2020, the Thai government launched various financial assistance schemes to stimulate the economy and support households' cost-of-living expenses. The first financial assistance program was called "Rao Mai Ting Gun (No One Left Behind)," which required affected workers who were not covered by the social security system, such as self-employed workers or any other informal workers, to register on the program's website. Qualified persons would receive a payment of 5,000 Thai baht a month for three months. Meanwhile, wage workers covered under social security could register for their unemployment compensation directly. The government also subsidized electricity and water bills as well as internet providers to upgrade the speed of fixed broadband for subscribers and provide internet free of charge for three months to support users' ability to work or learn from home. Household debt payment was also suspended for three months. In addition, soft loans were provided to boost cash flow for eligible people and SMEs. A 50-percent tuition fee subsidy was granted to all Thai students at all educational levels. Moreover, the government also put into place economic stimuli by means of allowance measures in order to support consumer spending on travel, namely, through the "Rao Tiew Duay Kan (We Travel Together)" campaign, in order to support local tourism sectors. Though some financial assistance seemed to meet the needs of households, it lasted only for a short period. And some people could not access government financial assistance due to a number of obstacles and deficiencies, ranging from lack of access to an online device, not

knowing how to register for assistance, being rejected by the program because they did not meet the criteria or the number of applicants already exceeded the program's limit, and so on.

To investigate how some workers gained back their income levels in the context of COVID-19, we conducted a three-phase survey in May, August, and November of 2020 to track Thai worker incomes over the first year of COVID-19 and collect as much relevant data as possible. The quantile regression was analyzed and we found that, as expected, being a formal worker and receiving a loan were beneficial for income recovery. Surprisingly, however, returning one's home province and training to acquire new skills did not really help workers to regain their incomes. Though a free government assistance transfer might be necessary as a one-time emergency measure, empirical results show that such assistance, if ongoing, actually slows down income recovery for the middle and the top quantile workers, perhaps because those who have enough savings to support themselves are less motivated to find new jobs given the availability of government support.
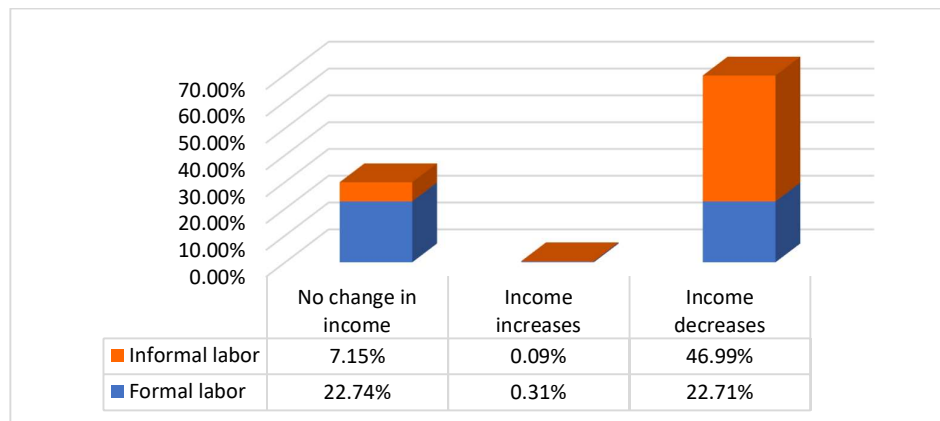
2 The data

According to macroeconomic data, COVID-19 caused the Thai economy in 2020 to contract by 6.2%, which is the worst performance since the Tom Yum Kung crisis in 1997. Looking into each economic sector, we find that the shares of the agriculture, industry, and service sectors were approximately unchanged for the previous five years (8.63%, 33.1%, and 58.27%, respectively, in 2020). This suggests that the COVID-19 shock affected all sectors across the Thai economy more or less evenly.

Tourism might be the most dramatic example of the severity of COVID-19 on the economy and unemployment. During the first half of 2020, Thai tourism businesses were shut down completely while during the second half of the year, most tourism-related businesses were kept (barely) afloat merely by the patronage of Thai tourists. The lockdown and social distancing measures created extra costs for all service-based entrepreneurs. Many accommodation businesses had to close down temporarily, and some eventually had to be liquidated altogether. Consequently, food, wellness, and other recreation and entertainment businesses that used to flourish mainly from tourists suffered great losses. Since it comprises about a quarter of Thailand's GDP, the tourism industry, together with its supply chain and related enterprises, accounted for up to 60% of the downturn in the 2020 GDP

Our survey data has also shed some light on the impact of the COVID-19 surge on Thai workers at an individual level. Figure 1 shows the percentages of workers with different types
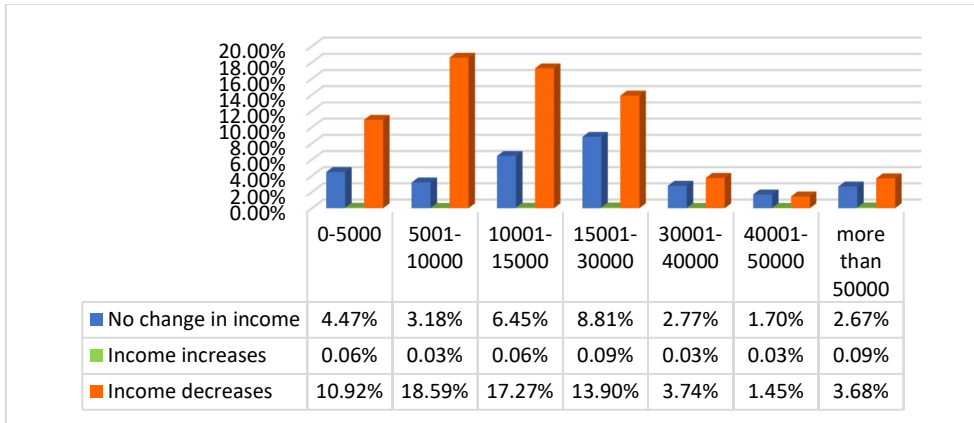
of income changes occurring from January to May 2020. We take for granted that these changes are due to the COVID-19 outbreak and the corresponding public policy responses. We found that as 69.7% of Thai workers suffered an income loss, the other significant portion of the labor force was unaffected, and a mere 0.4% experienced an increase in their income. Within the affected group, the majority were evidently informal laborers with no social insurance coverage. In detail, the percentage changes in individual labor income show a positively skewed distribution where the mean, median, mode, and standard error are -47.03%, -40%, 0%, and 40.44%, respectively. The maximum of income change is 120% while the minimum is -100%. (In fact, 19.88% of our sample completely lost their jobs). However, if we focus on informal workers, the mean, median, mode, and standard error of their percentage income change are much wider, at -63.3%, -66.67%, -100%, and 36.14% changes, respectively.

Figure 1: 2020 COVID-19 Impact on Percentage Income Change:

Formal vs Informal Laborers

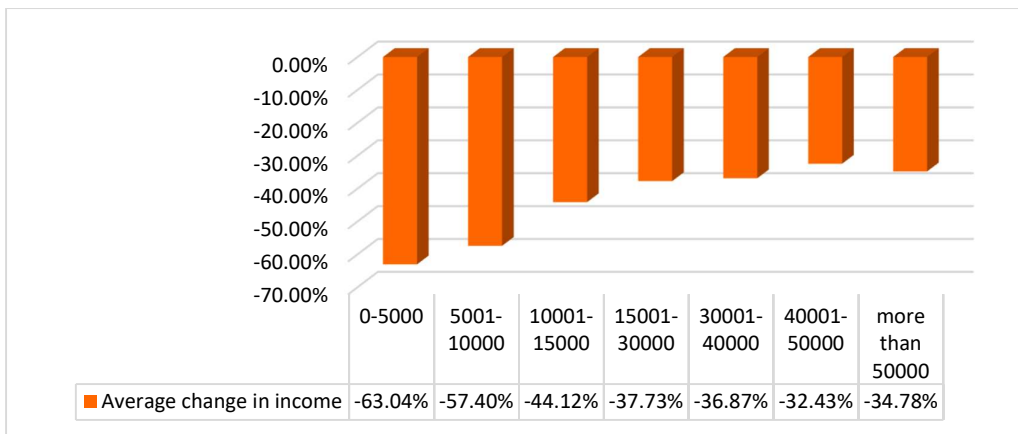|	No change in income	Income increases	Income decreases
Informal labor	7.15%	0.09%	46.99%
Formal labor	22.74%	0.31%	22.71%

Moreover, the survey data also suggest that the COVID-19 shock struck the poor harder than the rich. Figure 2a summarizes the relative frequency of income change divided by income levels before the COVID-19 outbreak (i.e., in January 2020). Notice that workers who initially had incomes between 5,001 and 10,000 baht shared the greatest proportion (18.59%) among those who suffered an income loss. For those with an initial income above 30,000 baht, the proportion of affected people does not significantly differ from that of the unaffected group. Regarding the magnitude, Figure 2b reports that workers with an initial income under 5,000 baht and 5,001–10,000 baht had to endure average percentage income changes of -63.04% and -57.40%, respectively, which makes them the two most affected groups.

Figure 2: 2020 COVID-19 Impact on Percentage Income Change: Initial Income

	0-5000	5001-10000	10001-15000	15001-30000	30001-40000	40001-50000	more than 50000
■ No change in income	4.47%	3.18%	6.45%	8.81%	2.77%	1.70%	2.67%
■ Income increases	0.06%	0.03%	0.06%	0.09%	0.03%	0.03%	0.09%
■ Income decreases	10.92%	18.59%	17.27%	13.90%	3.74%	1.45%	3.68%

(a) Relative Frequency

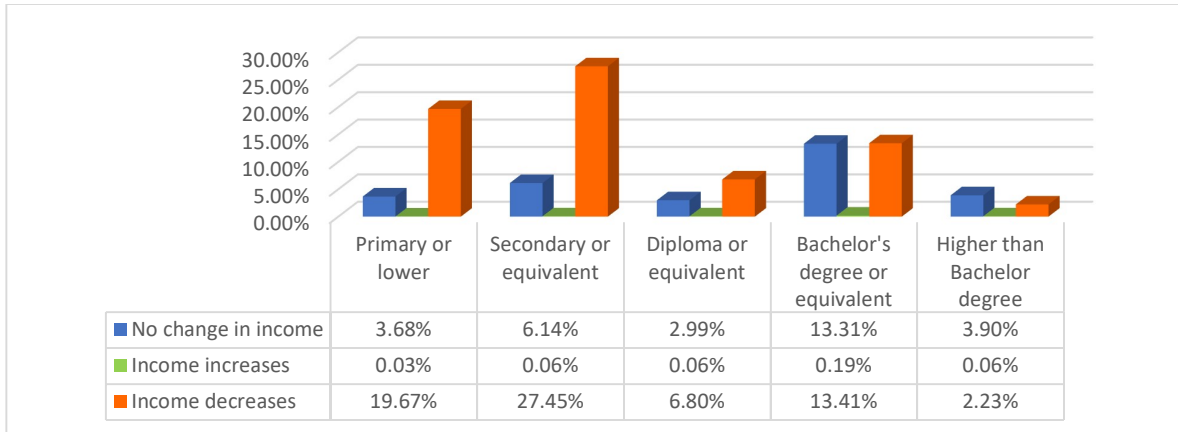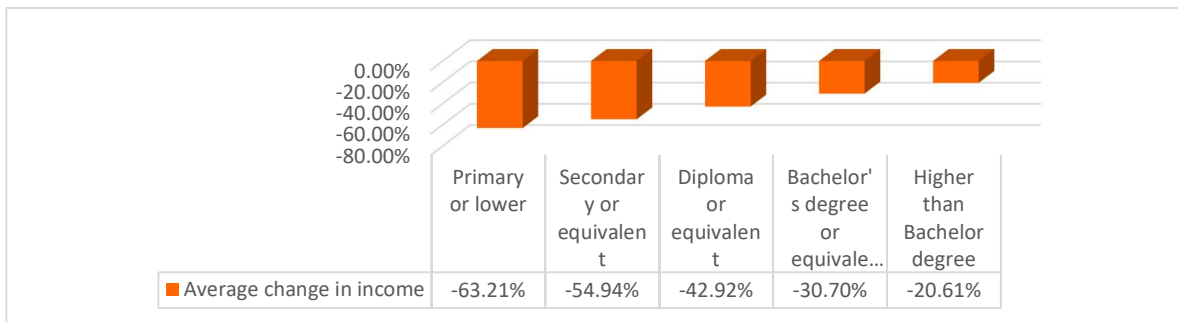|	0-5000	5001-10000	10001-15000	15001-30000	30001-40000	40001-50000	more than 50000
■ Average change in income	-63.04%	-57.40%	-44.12%	-37.73%	-36.87%	-32.43%	-34.78%

(b) Magnitude

Regarding education, Figure 3a indicates that the higher the educational accomplishment, the lower the probability that workers would suffer income loss during the COVID-19 outbreak in 2020. Additionally, the average percentage change in income is rising monotonically from -63.21% of the group with primary education or below to -20.61% of the group with higher than bachelor's degree, as presented in Figure 3b. All these data show how the COVID-19 crisis in Thailand was extremely severe. Besides the fact that the income shock was enormous, it hit more dramatically on (1) the informal workers who were unprotected by any social

security system, (2) those who were poor in the first place, and also (3) those who had a low educational level. Therefore, COVID-19 sharply amplified Thailand's social inequality in various aspects within just a few months.

Figure 3: 2020 COVID-19 Impact on Percentage Income Change: Education

	Primary or lower	Secondary or equivalent	Diploma or equivalent	Bachelor's degree or equivalent	Higher than Bachelor degree
■ No change in income	3.68%	6.14%	2.99%	13.31%	3.90%
■ Income increases	0.03%	0.06%	0.06%	0.19%	0.06%
■ Income decreases	19.67%	27.45%	6.80%	13.41%	2.23%

(a) Relative Frequency

	Primary or lower	Secondary or equivalent	Diploma or equivalent	Bachelor's degree or equivalent	Higher than Bachelor degree
■ Average change in income	-63.21%	-54.94%	-42.92%	-30.70%	-20.61%

(b) Magnitude

3 Estimation and results

The previous section describes how severely COVID-19 affected Thai workers in 2020. In this section, we are interested in how their incomes have been able to recover so far. During the crisis, there were several attempts from the Thai government to assist those who were affected, especially in terms of the direct financial assistance packages and soft loans mentioned above. Moreover, the government also encouraged workers to take advantage of upskill or reskill training programs provided through various platforms. Our panel survey data allow for testing whether these financial and non-financial assistance initiatives were of any help from the perspective of an individual worker's income recovery.

Direct financial assistance packages allowed affected informal workers and farmers to register to receive 5,000 baht per month for three months while affected formal laborers could receive severance pay. These financial assistance packages were short-term direct transfers aimed at lessening immediate income losses. As for the soft loans, beginning in April 2020 the Bank of Thailand was allowed by law to lend out 500 billion baht to commercial banks in other to distribute the loans to entrepreneurs who sustained losses from COVID-19 so as to avoid putting workers out of work or closing down businesses. Such lending would ideally help create jobs and save fundamentally healthy businesses faced with unexpected liquidity shortages. Finally, the training programs were set up so that Thai workers could access various training courses from both public and private institutes to develop new skills. For example, public vocational training centers offered affordable profession training throughout Thailand, aiming to help unemployed workers get new jobs.

The questionnaire used in the three-phase survey we conducted in May, August, and November 2020 was designed to include all variables that may influence income recovery from the COVID-19 pandemic. According to the Jarque-Bera test, our survey data on income levels in November 2020 were not distributed normally. This suggests that the Ordinary Least Square regression may be not an appropriate tool for use here. Moreover, it would be interestingly useful to see other, different impacts on income recovery as we compare the poor to the rich during the COVID-19 crisis. Therefore, we decided to analyze our data using quantile regression. Although we began with 3,000 observations in the first survey in May 2020, there remained only 1,287 observations that contained the tracked information for each individual from May to November 2020. We lost contact with some survey respondents as their telephone numbers were no longer in service. This could be due to the fact that many people tried to cut down their expenses as they encountered job loss or a severe income decline. The econometric model is specified below, and each variable is explained in Table 1.

$$
\begin{aligned}
\text{Income}_i = {} & \beta_1 + \beta_2 \text{Initial\_Income}_i + \beta_3 \text{Not\_Affected}_i + \beta_4 \text{Male}_i + \beta_5 \text{Age}_i + \beta_6 \text{Degree}_i \\
& + \beta_7 \text{Formal}_i + \beta_8 \text{Tourism}_i + \beta_9 \text{Food\_Restaurant}_i + \beta_{10} \text{Service}_i \\
& + \beta_{11} \text{Trade}_i + \beta_{12} \text{Logistic}_i + \beta_{13} \text{Construction}_i + \beta_{14} \text{Manufacture}_i \\
& + \beta_{15} \text{Agriculture}_i + \beta_{16} \text{Domicile}_i + \beta_{17} \text{GovAsst\_May}_i + \beta_{18} \text{GovAsst\_Aug}_i \\
& + \beta_{19} \text{Loan\_May}_i + \beta_{20} \text{Loan\_Aug}_i + \beta_{21} \text{Loan\_Nov}_i + \beta_{22} \text{Train\_May}_i \\
& + \beta_{23} \text{Train\_Aug}_i + \beta_{24} \text{Train\_Nov}_i + u_i
\end{aligned}
$$

Table 1: Summary of Variables

Variables	Description	Unit	Expected Sign
Income	Income in November 2020	1,000 baht/ month	Not applicable
Initial_Income	Income in January 2020 (before COVID-19)	1,000 baht/ month	Trivially positive
Not_Affected	Dummy variable for not having any income loss during COVID-19 period	Not appli- cable	Trivially positive
Male	Dummy variable for being male	Not appli- cable	Ambiguous. Possibly insignificant as COVID-19 affects all genders equally.
Age	Age	Years	Negative, as it should be harder for the old to find a new job.
Degree	Dummy variable for having bachelor's degree or higher	Not appli- cable	Positive, as it should be easier for the highly educated to find a new job during social distancing policy.
Formal	Dummy variable for being formal laborer	Not appli- cable	Positive, as formal laborers are protected by the social security system and hence should be more resilient.
Tourism Food_Restaurant Service Trade Logistic Construction Manufacture Agriculture	Dummy variable for belonging in a particular economic sector (public sector is the benchmark group)	Not appli- cable	Negative, as the public sector should be the least affected sector from COVID-19.

Variables	Description	Unit	Expected Sign
Domicile	Number of survey rounds that the sample subject was at his/her domicile	Rounds	Positive, as going back to one's hometown should be easier for the unemployed to make a living.
GovAsst_May GovAsst_Aug	Dummy variable for receiving any government assistance transfer		Ambiguous. Such a rescue package can either make it easier for laborers to find a new job or reduce their efforts to quickly find new jobs.
Loan_May Loan_Aug Loan_Nov	The amount of borrowing to relieve COVID-19 problems during March-May, June-Aug, and September-November, respectively	1,000 baht	Positive, as the loan opens up investment opportunities to increase future income.
Train_May Train_Aug Train_Nov	Dummy variable for having any training during March-May, June-Aug, and September-November, respectively	Not applicable	Positive, as having new skills should open up more job opportunities.

4 Discussion

To see how the income recovery during COVID-19 crisis in 2020, the quantile regression is estimated using Huber Sandwich standard errors and covariance as well as kernel (residual) scalar sparsity. The result is shown in Table 2 below.

Table 2 summarizes how the median income in November 2020 is determined when the initial income in January 2020 and the COVID-19 income shock are controlled. Thus, these

coefficient estimates of other variables indicate to what extent and at what rate they enhance income recovery from COVID-19.

At the median, gender and age do not matter for any income recovery, while a bachelor's degree or higher education achievement is helpful. Working outside the public sector clearly indicates a slower recovery, as observed by the negative estimation for all sector variables even though those of tourism and agriculture are statistically insignificant. Borrowing and training undertaken since June 2020 are statistically insignificant in terms of recovering income by November 2020 possibly due to the insufficient amount of time that had passed. For the rest of policy-related variables, it is interesting to see their impacts on income recovery from COVID-19 in all quantiles, as shown in Figure 4 below.

Table 2: Median Income Regression Output

Regressand	Income		
Regressor	Estimated Coefficient	Regressor	Estimated Coefficient
Constant	-40.3083***	Construction	-2.7658**
ln (Initial_Income)	4.6039***	Manufacture	-3.2956***
Not_Affected	7.3192***	Agriculture	-1.4918
Male	0.4657	Domicile	0.5459*
ln (Age)	0.9556	GovAsst_May	-2.2201***
Degree	3.5094***	GovAsst_Aug	-2.0935***
Formal	2.5922***	Loan_May	0.0116***
Tourism	-7.0650	Loan_Aug	-0.0050
Food_Restaurant	-3.6765***	Loan_Nov	-0.0054
Service	-2.3574**	Train_May	-6.8415***
Trade	-4.2182***	Train_Aug	-0.0370
Logistic	-5.3979***	Train_Nov	-0.1278

*, ** and *** are statistically significant at 10%, 5%, and 1% significance level, respectively.

In Figure 4(a), we see that being a formal worker raised the income recovery for low and middle quantiles. Figure 4(b) points out that encouraging workers to go back to their domiciles did not really help them to raise their incomes. Figure 4(c)-(d) suggests that government assistance transfers to help COVID-19 victims actually slowed down the income recovery process for the middle and the top income quantiles, but not the low quantiles. Borrowing in May did generate additional income in November for the middle and the top, but not the low quantiles, as shown in Figure 4(e). The most surprising result can be seen in Figure 4(f), where training in May was not beneficial to income recovery and even seemingly harmful for those in the middle quantiles. This might be interpreted as acquiring new skills did not really help to get a new job easily during the economy-wide COVID-19 crisis and perhaps that it was even a waste of time that hindered income recovery in the short-run.

Figure 4: Estimated Coefficient 95% Confidence Interval of All Quantiles

(a) Formal

(b) Domicile

(c) GovAsst_May

(d) GovAsst_Aug

(e) Loan_May	(f) Train_May
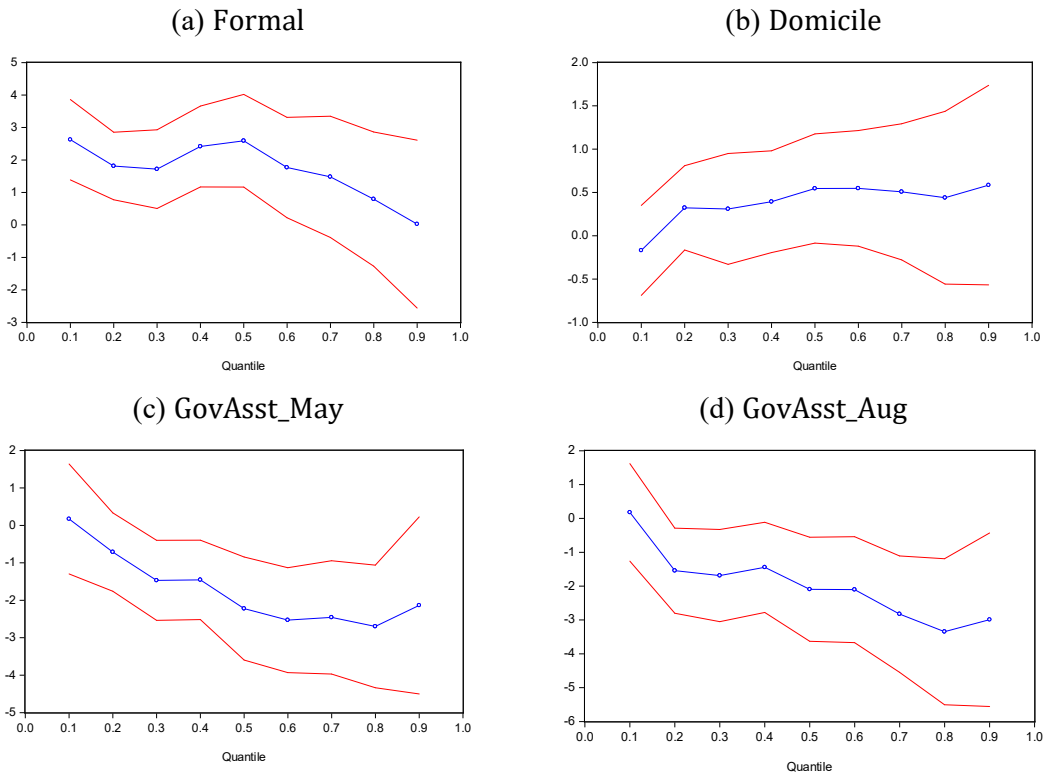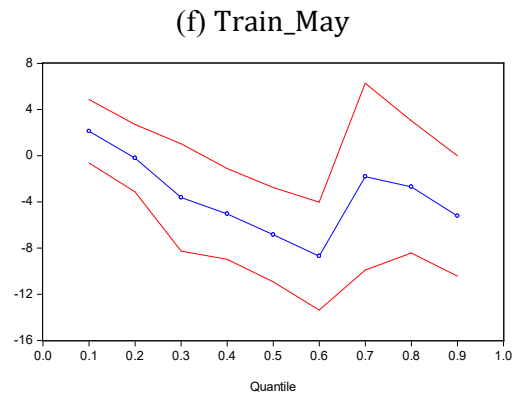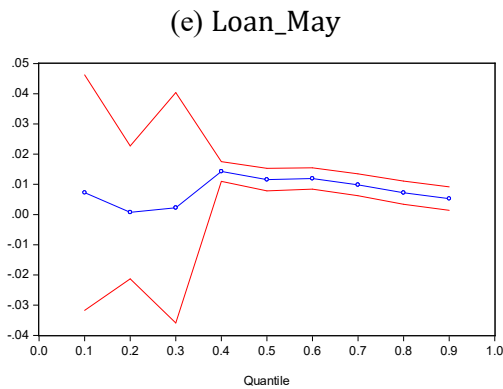
Intuitively, COVID-19 would be thought to make many workers and entrepreneurs in almost all sectors unable to work or run their businesses. For the poor who did not have any savings, any money they received from either government assistance transfers or soft loans ended up being used for their consumption and did not diminish their efforts to find new sources of income. However, for those who had some savings at hand (middle and top quantiles), receiving free transfers from the government disincentivized them from making greater efforts to recover their income. Perhaps, however, they merely preferred staying safely at home during COVID-19 instead of enthusiastically searching for new jobs, using their remaining savings to live on in the meantime. Unlike the free transfer policy, providing more soft loans to such people was more effective as this encouraged them to generate enough income to repay the debts incurred from such loans.

To sum up the lessons learned from COVID-19 crisis, the government should try to reduce the size of the informal labor sector by integrating informal workers into the social security system. This will make the labor market and hence the economy more resilient in the face of any other shocks that may occur after COVID-19. In the future, when such a shock occurs, free assistance transfers from the government should be made available to only the poor with no savings, for whom it is most suitable and who would likely not survive without it. For the rest, granting soft loans would be the better policy and would help the economy recover much faster.

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