

# FEATURE ARTICLE

**CASH VERSUS CPF? UNDERSTANDING THE PREFERENCES OF  
LOW-INCOME RESIDENTS THROUGH A FIELD EXPERIMENT**

# CASH VERSUS CPF? UNDERSTANDING THE PREFERENCES OF LOW-INCOME RESIDENTS THROUGH A FIELD EXPERIMENT

## EXECUTIVE SUMMARY

- This article presents results from a field experiment which studied low-income residents' preferences for cash and CPF.
- Our results suggest that the preferences of low-income residents regarding cash and CPF are very heterogeneous. Nearly half of our sample of low-income residents (48 per cent) expressed a strong preference to have part of their incomes saved in CPF accounts, citing the need to commit themselves to save for their future needs.
- On the other hand, a minority (14 per cent) valued the liquidity that cash offers, and expressed preference for job packages that paid exclusively cash.
- Our results suggest that the current system of paying some of workers' incomes into CPF is suitable for most low-income residents.

The views expressed in this paper are solely those of the authors and do not necessarily reflect those of the Ministry of Trade and Industry, the Ministry of Manpower or the Government of Singapore.

## INTRODUCTION

The Central Provident Fund (CPF) is a key institution in Singapore, where workers and employers contribute towards savings accounts that provide for the housing, healthcare and retirement needs of workers. The Workfare Income Supplement (WIS) scheme, instituted in 2007, is a major pillar of Singapore's social security system. WIS aims to support low-wage workers (LWWs) by topping up their incomes and CPF savings, while preserving work incentives. WIS payments are currently weighted towards CPF – roughly 71 per cent of employees' WIS is paid into CPF, while 100 per cent of self-employed persons' WIS is paid into Medisave.

Several commentators and members of the public have argued that WIS payments should include a larger cash component, because (a) LWWs might be more exposed than the average worker to negative economic shocks; (b) LWWs may have limited access to the formal credit market and may thus be liquidity constrained; and (c) cash payments are more *salient* than CPF payments and may thus encourage a greater increase in labour supply among economically inactive residents and employed LWWs.<sup>1</sup>

This study examines the preferences of low-income residents (LIRs) between Cash and CPF, and has two aims. First, our results shed light on whether current WIS payments are too strongly weighted in CPF. Second, our findings help policymakers understand how different groups of low-income residents view the cash-CPF trade-off, which may help in the upcoming review of income supplementation schemes and CPF contribution rates for LIRs.

<sup>1</sup> *Salience* is a concept in behavioural economics which refers to how prominently an event (or incentive) features in a person's thinking. Recent events and events that occur frequently are more salient than one-off events.

## RELATED LITERATURE

Our study is closely related to a large academic literature in economics that tries to estimate how individuals choose between present and future rewards. We highlight three main takeaways from this literature.

First, previous research has found that the extent to which **individuals value the future in place of the present may vary significantly with social and demographic characteristics**. For example, Harrison, Lau and Williams (2002) found that rich Danes had lower discount rates (i.e. they valued present rewards less) while retired and credit-unworthy Danes had higher discount rates (i.e. they placed more weight on present rewards). The authors also found that an individual household's discount rate was relatively constant over time.

Second, **people value financial commitment devices**. In Beshears et al (2011), people were given money and asked to allocate it between a liquid account, which permitted withdrawal at any time during an experiment that lasted several months, and one or more commitment accounts, which penalised or restricted withdrawals. The researchers found that nearly half the money was placed in the commitment account when liquid and commitment accounts earned the same interest, and almost 25 per cent of the money was placed in the commitment account even when it earned less interest. Moreover, more binding commitment accounts (e.g. those with greater withdrawal penalties) had more money placed in them than less binding commitment accounts.

Third, **financial commitment devices can impact long-run savings behaviour**. Ashraf, Karlan and Yin (2006) report evidence from an experiment in which people were randomly selected and encouraged to take up a commitment savings product that restricted their access to their savings. They found that opening a commitment savings account helped people achieve a lasting increase in savings which persisted even after the commitment period.

Choice experiments are often used by researchers to understand how individuals trade off immediate and delayed rewards. In a typical choice experiment, individuals are presented two hypothetical options – with one option more weighted towards immediate gratification than the other (Frederick, Loewenstein and O'Donoghue, 2002). Our study adopts this methodology to understand how low-wage workers trade off cash and CPF payments.

## SURVEY METHODOLOGY

We worked together with a commercial survey company to conduct a pilot survey of 100 households and a full survey of 1,000 households. Surveys were carried out through door-to-door interviews and at randomly selected housing estates across the island. Respondents were required to be (a) Singaporean / PR; (b) living in 1-room, 2-room or 3-room HDB flats; (c) either unemployed, economically inactive or earning less than \$2,200; and (d) at least 25 years old. Respondents were given a small token of appreciation upon successfully completing the survey.

To determine LIRs' preferences between CPF and cash, we adopted a similar approach to Frederick, Loewenstein and O'Donoghue (2002). Respondents were presented with 10 scenarios and asked in each case to choose between Packages A and B. Package A (the immediate gratification package) always paid a fixed amount in cash, while Package B (the delayed reward package) contained a combination of cash and CPF. [Exhibit 1](#) shows the list of scenarios presented to the respondent.

The survey was designed with the intention to elicit realistic responses by approximating the wages that respondents could plausibly expect to receive. For example, we avoided unrealistically large pay packages (e.g. \$3,000 CPF vs \$1,000 cash) since our target respondents were LIRs. The survey design also asked that respondents considered the wage package in totality, rather than just the WIS component. This is to reflect the fact that WIS is really a part of total wage package, rather than a "windfall" that the Government provides. To encourage the respondent to consider each scenario independently, each scenario was presented individually via a flash card. Moreover, the total value of each package was made clear to the recipient.

**Exhibit 1: Main Question in the Survey Regarding the Choice between Cash and CPF**

**[INSTRUCTION]** 10 scenarios will be shown individually using flash cards. Please choose either Package A or Package B.

**[SHOW CARDS]** Interviewer will show a set of 10 cards to the interviewee with two different job packages on each card and record down the responses.

**[ONLY FOR THOSE EARNING \$1,000-\$2,200]**

No.	Package A	Package B			Circle Choice	
	Cash (\$)	Cash (\$)	CPF (\$)	Total (\$)	Package	
1	1,200	840	280	1,120	A	B
2	1,200	1,120	160	1,280	A	B
3	1,200	1,160	240	1,400	A	B
4	1,200	1,160	120	1,280	A	B
5	1,200	1,200	40	1,240	A	B
6	1,200	1,040	160	1,200	A	B
7	1,200	1,080	80	1,160	A	B
8	1,200	1,120	120	1,240	A	B
9	1,200	920	240	1,160	A	B
10	1,200	1,040	200	1,240	A	B

Note: Respondents earning less than \$1,000 or unemployed respondents were shown a table with values which were half of those in the table above. This was to ensure that the amounts being presented to them were closer to their income and thus perceived to be more realistic.

By varying the amounts of cash and CPF in Package B, a respondent in each scenario would have a different implied discount rate  $\beta$ . For instance, a respondent who selected Package B in scenario 10 is indicating that she valued the combination of \$1,040 Cash, \$200 CPF over \$1,200 Cash. This implies that, in her eyes, \$1 in CPF is worth *at least* \$0.80 in Cash. (The calculation of  $\beta$  is given below.) The scenarios were designed such that  $\beta$  varied between 0 and 1.5.

$$\begin{aligned}
 \$1,040 \text{ Cash} + \beta \$200 \text{ CPF} &> \$1,200 \text{ Cash} \\
 \beta \$200 \text{ CPF} &> \$160 \text{ Cash} \\
 \beta &> 0.8 \\
 (\text{ie. } \$1 \text{ CPF is worth at least } \$0.80 \text{ Cash})
 \end{aligned}$$

We also asked respondents questions related to the following:

- Knowledge of CPF.** Respondents were asked about the allowed uses of CPF monies, whether CPF monies could be inherited and whether they knew their account balance.
- Time preference.** Respondents were asked whether they would prefer to receive \$1,200 in cash today or a larger amount of cash one year later.

- c. Employment outcomes. Respondents were asked about their employment status and non-labour income, and how many employers they had in the past two years (a measure of job churn). Unemployed or economically inactive respondents were also asked the wage at which they would be prepared to take up a job, a measure of their reservation wage.
- d. Socio-demographic characteristics. Respondents were asked about their education, marital status, home ownership, household income, household expenditure and savings profile.

## PROFILE OF RESPONDENTS

Below, we summarise the demographic characteristics of the 1,000 people surveyed:

- a. Citizenship, gender, race and age. Most respondents (86 per cent) were Singaporeans, and more than half (60 per cent) were women. Ethnic minorities were oversampled (19 per cent Malays, 10 per cent Indians) as is the typical procedure with surveys of a small sample size. Respondents were also relatively old – the median age group was 50-54 years.
- b. Education, marital status, housing type and home ownership. Respondents generally had a low level of education. The median level of education was Lower Secondary, and only 8 per cent had a university degree. Most respondents were married (70 per cent) and lived in 3-room flats (85 per cent), and a majority (62 per cent) owned their homes.
- c. Employment status, income and job churn. More than half the respondents were either employed (52 per cent) or self-employed (5 per cent), while the remainder was either unemployed (13 per cent) or not looking for a job (30 per cent). Of the respondents who were working, the majority (64 per cent) earned \$1,000-\$2,200 while the remainder earned less than \$1,000. 12 per cent of respondents had changed their employer twice or more in the past two years.
- d. Knowledge about CPF and use of CPF monies. Respondents generally had good knowledge of the uses of CPF monies. Nearly all respondents knew that CPF could be used to pay housing mortgages (98 per cent) and medical bills (95 per cent), and most knew that CPF monies could be bequeathed (92 per cent). On the other hand, less than half (46 per cent) knew that CPF funds could be used to pay local university and polytechnic tuition fees. In spite of good knowledge about CPF, reported usage of CPF monies was generally low – few respondents reported using their CPF to pay their mortgages (15 per cent) or medical bills (14 per cent) over the past six months.

## RESULTS

Our field experiment had two key findings. First, responses to both packages were polarised (see [Exhibit 2](#)). However, almost half the respondents (48 per cent) always preferred the cash-CPF combination (Package B) to the pure cash package (Package A), even for those scenarios where the total dollar value of Package B was less than that of Package A.

At the other extreme, 15 per cent of respondents always preferred the pure cash package (Package A) to the cash-CPF combination (Package B) even when the total dollar value of Package A was less than that of Package B. The remaining 38 per cent preferred the cash-CPF combination (Package B) in some scenarios and preferred the pure cash package (Package A) in other scenarios. This group did not display very strong preferences towards either cash or CPF.

**Exhibit 2: Summary of Respondents' Choices**

Choice	Share of Respondents (%)
Always chose the cash-CPF combination (Package B)	47.8
Always chose the pure cash combination (Package A)	14.0
Chose a mix of packages	38.2

To better understand the characteristics of respondents who always chose either Package B (the '*always CPF*' group) or Package A (the '*always cash*' group), we ran two sets of probit regressions to investigate which characteristics affect the probability of being in either group.<sup>2</sup> [Exhibit 3](#) summarises the results from the two sets of regressions. We found evidence of the following:

- a. Women were more likely than men to always prefer the cash-CPF combination. This could be because women can expect to live longer and thus need to save more for their retirement, or because women have stronger demand for financial commitment devices, as other authors, such as Ashraf, Karlan and Yin (2006), found. We found no evidence that men and women had different future discount rates<sup>3</sup>.
- b. Conversely, we found that self-employed respondents and respondents who had diplomas or university degrees were significantly less likely to display strong preferences for CPF.
  - i. Self-employed respondents may value cash more because their incomes are more volatile, and they need liquidity to tide over income shocks. The need for liquidity was a strong motivator for respondents to choose cash over CPF: nearly 61 per cent of the respondents who always selected the pure cash package (Package A) indicated that they preferred to have cash in case they suddenly needed the money in the future.
  - ii. Diploma and degree holders may have weaker preferences for CPF because they believe they have better outside investment opportunities.
- c. Home owners were less likely to always select the pure cash package (Package A), possibly because Singaporean home owners often service their housing mortgages through their CPF accounts.
- d. People who agreed that CPF helps them commit to saving for retirement were less likely to always select the pure cash package (Package A) and more likely to always select the cash-CPF combination (Package B).

<sup>2</sup> We run probit regressions of the following form: Probability ("*always selects Package B*" |  $X$ ) =  $\Phi(X'\beta)$ ; where  $X$  is a vector of individual characteristics,  $\Phi$  is the cumulative distribution function (CDF) of a standard normal distribution and  $\beta$  is a vector of coefficients that indicates how each individual characteristic affects the probability of *always selecting Package B* (the cash-CPF combination). We ran a similar regression to estimate how individual characteristics affect the probability of *always selecting Package A* (the pure cash package).

<sup>3</sup> A respondent with a higher future discount rate values the present more in relation to the future.

**Exhibit 3: Probit Regression on whether Individual is in 'Always CPF' or 'Always Cash' Group**

Individual Characteristics	Dependent variable: 1 if respondent always chooses Package B 'Always CPF'	Dependent variable: 1 if respondent always chooses Package A 'Always Cash'
	Average Marginal Effects (%)	
Age	-1.7	1.3
Age <sup>2</sup>	0.0	0.0
Female	6.3*	-9.1***
Married	3.3	-3.6
Malay	0.3	-3.1
Indian	8.5	-5.1
Other races	-0.9	-4.2
Self-employed	-16.8**	1.3
Unemployed	0.6	-1.8
Not looking for job	4.0	0.7
Experience job churn <sup>4</sup>	-11.1	-2.6
Diploma or degree holder	-21.0***	6.3*
Income < \$1,000	-6.4	4.6
Have > 6 months of savings	-4.2	-6.3***
Two room flat	2.8	-3.9
Three room flat	5.3	-1.8
Homeowner	0.0	-5.8**
Future discount rate	-19.9*	-7.7
Agree that "CPF is useful in helping to commit to saving for retirement needs"	14.5***	-8.0***

\*Significant at 10% level, \*\*Significant at 5% level, \*\*\*Significant at 1% level

Second, we found that respondents valued the fact that CPF committed them to save, echoing the findings of other authors in the economics literature. The 48 per cent who always selected the cash-CPF combination (Package B) sometimes chose it over a pure cash package (Package A) even when the total dollar value of the latter was higher (Exhibit 4 shows the scenarios in which this was the case). This is puzzling because respondents could potentially pick the pure cash package and deposit some of the money into their CPF accounts, creating a cash-CPF combination that is strictly better than the one offered by Package B.<sup>5</sup> However, respondents' behavior is consistent with their seeing CPF as a commitment savings device. Like us, Ashraf, Karlan and Yin (2006) and Beshears et al (2011) both find evidence that people are willing to pay a premium for commitment savings devices because they do not trust themselves to save for retirement in normal bank (saving) accounts.

**Exhibit 4: Scenarios where Value in Pure Cash Package Exceeds Package with CPF**

Scenario	Package A	Package B		
	Cash	Cash	CPF	Total
1	1,200	840	280	1,120
7	1,200	1,080	80	1,160
9	1,200	920	240	1,160

<sup>4</sup> A respondent is classified as "experiencing job churn" if he or she had more than two jobs in the last two years.

<sup>5</sup> Singapore residents may voluntarily contribute to their CPF accounts.

Consistent with our hypothesis, our regression results indicated that people who agreed that CPF helped them commit to saving for retirement were 15 per cent more likely to always select the cash-CPF combination (Package B). Moreover, when asked why they always selected Package B, 85 per cent of the respondents who did so indicated that **putting money in their CPF commits them to save**. Qualitative comments from the respondents also validated this 'commitment savings' hypothesis.

One possible objection to our study is that respondents did not understand the survey fully and were thus not adequately considering the amounts in the scenarios presented to them. The high number of individuals selecting either Package A or Package B for all scenarios suggests that respondents may have simply answered using a mental heuristic or 'rule of thumb'. While this possibility cannot be ruled out, we believe that the results are still instructive for the following reasons:

- a. First, the scenarios were presented to the respondents early in the ten-minute survey, reducing the chance of respondent fatigue and impatience;
- b. Second, it is striking that the choices of respondents correlated well with their individual characteristics, such as education, employment status and home ownership. For example, women clearly exhibited stronger preference for CPF, consistent with evidence from other authors, such as Ashraf, Karlan and Yin (2006), that women have stronger demand for commitment savings products. We thus believe that genuine differences in their economic and other needs were driving the choice of heuristic, which then influenced whether they always selected Package A or Package B, or a mix of the two.

## CONCLUSION

Our results suggest that low-income residents' preferences between cash and CPF are highly heterogeneous.

- a. A sizeable 48 per cent of respondents always chose the cash-CPF combination (Package B), even when its total dollar value was less than that of the pure cash package (Package A). This indicates a strong preference for CPF. Most of these respondents valued the fact that CPF commits them to save, a finding that is consistent with other economic research which frequently finds strong demand for commitment savings products.
- b. On the other hand, 14 per cent of respondents always chose the pure cash package (Package A), demonstrating a strong preference for cash. Most of these respondents valued the liquidity that cash provides to tide over future shocks, even though they did not urgently need the cash.
- c. The remaining 38 per cent preferred the cash-CPF combination (Package B) in some scenarios and preferred the pure cash package (Package A) in other scenarios, and as such did not demonstrate a very strong preference for either cash or CPF.

These results suggest that it is not easy to structure income supplement payments to satisfy all groups. Individual preferences may vary based on gender, education and economic circumstances, such as whether the individual is a home-owner or self-employed. Although a sizeable group of individuals exhibited strong preferences towards bundles which include CPF, there are also individuals who appear to strongly prefer the flexibility that cash provides.



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