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WHO WILL RUN THEIR BANK?

NO. 3

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Executive Summary

This study aims to identify how trust, awareness, household economics and demographic factors affect the nature and the number of people who will run a bank. The sample is drawn from seven countries. The findings focus on relationships that transcend country boundaries.

The study is designed with four scenarios defined by presence/absence of deposit insurance and whether the person has their money in a troubled bank or not. The similarity of response across countries to these two key variables is strong. Across countries, under the least favourable conditions in our study, 56% of respondents said they would run their bank. Under the most favourable conditions, 21% of respondents said they would run. These massive differences have real implications for both policy and public communications.

A belief that deposits are protected is the single biggest factor in stemming withdrawals. Across scenarios, belief in deposit protection reduces the odds of a bank run by about 65%. Having money in a troubled bank has a massive impact too. When people don't believe they have deposit insurance, it increases the odds of running a bank by about 80%. Note that personal belief drives run behaviour. If a person doesn't know their deposits are protected, they react as if they are not protected.

Among the demographic variables, age is more critical than sex, household composition, and economic indicators. Young adults are 30-40% more likely to run than middle-aged depositors, while depositors over 60 are about 30% less likely to run than middle-aged depositors. Study results suggest that this is likely due to age differences in perceived risk.

Trust in government and banks, both to protect money and to handle crises, also impacts run behaviour. Trust lowers the likelihood of a person running a bank across all scenarios; trust in bank competence reduces the odds of a bank run by about 46% and trust in government competence by about 37%. Building trust in banks and public institutions is important, although a bank failure can quickly erode trust in a bank.

While there are differences in the precise numbers across countries, these are small differences in amount rather than major differences in overall response. Results suggest that risk of loss of money is assessed in comparable ways across countries.

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Who will run their Bank?

Edwin L. Weinstein and Yaz Gulnur Muradoglu¹

1 Introduction²

Confidence in the banking system underpins the economic stability of most jurisdictions. When or if that confidence is shaken for any reason (and not necessarily due to bank related reasons), depositor response in the form of bank runs affects both the cost and nature of the action needed to stabilise and restore confidence in the financial system. In the wake of the 2008 economic crisis the cost of remediation of possible bank runs in EU countries exceeded €2 trillion (Panetta et al, 2009) in the aftermath of the bank run on Northern Rock in the UK.

“Bank runs”, whether on individual banks or systemic, are characterised by large scale and nearly simultaneous depositor withdrawals. They are central to our discussion of financial stability. While they may or may not be affected by macroeconomic events, they are the cumulative result of myriad individual decisions about how to protect deposits in the face of perceived risks of not being able to use their deposits. Solvency is not the only kind of weakness that can precipitate a bank run. It can also be fostered by liquidity issues, temporary lack of access to funds for the depositor, economic shocks, currency devaluation, evidence of corruption and more (Frolov, 2004; Singh & Labrosse, 2012; Brown, Guin & Markoetter, 2014).

Reflecting on the crisis precipitated by Northern Rock in the UK, Chater (2015) talks about three fundamental kinds of trust labelled “Alignment, Benevolence, Competence (ABC)” that underpin banking relationships. These elements of trust affect whether someone decides to run or not. Essentially, the depositor asks whether their interests can and will be effectively protected by the bank and the government, including a government-backed deposit insurer. Fundamental trust in their bank, the country’s banking system and protection of their bank deposits prior to bank weakness will shape these judgments. But faced with any possible trigger, the decision to stay or run is driven by the depositor’s belief that they will lose some of their money, which is in turn driven by lack of trust in institutions they expect to protect their money (Nuttall & Dent, 2008). The belief that money is protected is related to awareness of deposit insurance and the protection it affords (Takemura et al, 2011; Takemura & Kozu, 2009; Iyer & Puri, 2012). Awareness of deposit insurance is related to several demographic factors including age, sex, education, income and more (Bartiloro, 2011; Weinstein, 2012).

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² We thank Bert Van Roosebeke, Ryan Defina and David Walker from the International Association of Deposit Insurers for feedback on the paper. All opinions and errors are the authors’ responsibility.

This study follows proprietary and hence unpublished studies on run behaviour for the Canada Deposit Insurance Corporation in 2016 (Muradoglu & Weinstein, 2016), as well as a follow-up study that extended this early work (Weinstein, 2018) and similar work for an undisclosed Asian Deposit Insurance Corporation (Muradoglu, 2018). Those studies focused on demographics, confidence, and awareness of deposit insurance in relation to run behaviour.

This study aims to identify how trust, awareness, household economics and demographic factors affect the nature and the number of people who will run a bank. To a lesser extent, it also looks at the credibility of communication sources for different groups.

This study looks at potential run behaviour across seven countries to better understand the impact of these factors across countries and cultures. While there are seven countries involved, the focus of the work is identifying relationships that transcend cultural boundaries. Each country has a different structure for deposit protection. Ireland and India house their deposit insurer within their central bank; Australia within the bank supervisor; Canada, the US, and the UK have operationally independent agencies, while deposit insurance is not fully established in New Zealand. These institutional differences make it hazardous to generalise our findings to other jurisdictions

These seven countries all have relatively high levels of trust in their banks and their government, as the survey itself confirms. We do not believe the results can be generalised to other jurisdictions where this base of trust cannot be assumed. While New Zealand is the only jurisdiction without an active deposit insurer at the time of the survey, the fact that almost half the NZ respondents believe they already have deposit insurance makes responses little different than some other countries in the sample.

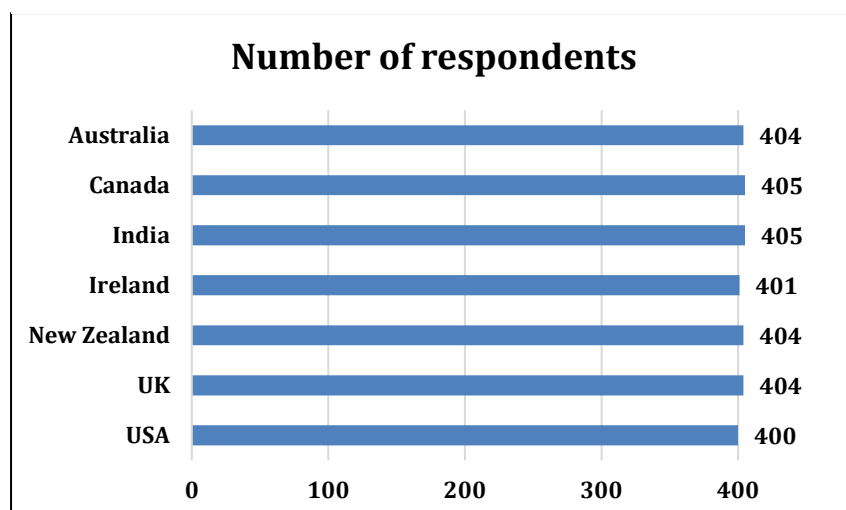
Due to the sensitive nature of this work, we do not identify country-specific results in this report, either directly or indirectly. Building a responsible country-specific model requires a sample size that is 4-5 times the size of the sample we have for each country. As well, such a sample would require a more precise demographic balancing of region within country, translation into other widely used languages, and additional considerations that differ from country-to-country.

The focus of the study is depositor reaction. While the structure of the deposit insurers differs considerably by jurisdiction, we do not judge depositor reaction in relation to the structure of the deposit insurer or how deposit insurance is funded. Given that the average depositor doesn't know the limit of their coverage and many don't know the name of their deposit insurer, we do not believe that these structural issues affect their judgment of risk. We focus instead on the underlying issue of who believes their money is safe and what they do in relation to that belief.

2 Method

The study is an online survey of some 2,823 adult depositors (Age 18+) with at least 400 respondents from each of seven countries where English is commonly understood by those with savings: Australia, Canada, India, Ireland, New Zealand, United Kingdom (UK) and the United States (USA).

Figure 1: Number of respondents



India differs from the other countries in economic development. While other countries may seem like one another, they differ in trust in government/ banks, incidence of bank failure, household income, concentration of wealth, awareness of deposit insurance and more. We also note that New Zealand does not yet have an operational deposit protection

regime and Ireland's deposit protection regime is part of its Central Bank. Therefore, the sample has a measure of diversity in deposit insurance practices as well as country characteristics.

The study used an online panel provided by Momentive/Survey Monkey to gather information in all countries. To the extent possible, the sample in each country was representative of the population by age and sex. There was no income qualification nor any regional matching within country, but participants had to have a savings or transaction account to qualify.

The questions in the online survey included demographics, five types of trust, awareness of deposit insurance, sources of information, and bank weakness scenarios. Except for question "tweaks" due to differences in economics (*e.g., household income, financial assets, etc.*) and organisations (*e.g., deposit insurance versus deposit guarantee; federal government, central government, central bank*), questions are the same across countries (see Appendix 5.1).

As a matter of note, we developed six household income categories based on common questions asked in each country according to Momentive/Survey Monkey. We used the income categories to generate four financial asset categories in a standardised manner across countries. For this purpose, we constructed income brackets around median income in each country. In this way, we created a roughly comparable set of household economic indicators across countries. We also looked at family composition including the number of adults present and whether there were kids under 18 years old.

One set of questions deal with trust and they are meant to reflect a combination of alignment of interests, benevolence of organisational intent, and institutional competence. There are five fundamental kinds of trust examined in all countries:

- i. The Government will make sure that I get back the money in my accounts
- ii. The bank will make sure my money is safe
- iii. My bank can handle the financial problems that come with tough times
- iv. The Government can successfully deal with a bank failure
- v. I will get my money back without a fight.

There are four kinds of awareness questions: are people aware that their deposits are protected; can they name the organisation that protects their deposits; do they know the monetary limit on protection; and prior to the survey had they heard of deposit insurance. “Heard of deposit insurance” was ultimately discarded because responses made it clear that this was tied to the name of the deposit insurance scheme in their country. If “insurer” or “insurance” wasn’t part of the name, few had heard of deposit insurance.

For the bank weakness scenarios, the study uses words and pictures to introduce qualified respondents to ABC Bank – a bank in financial trouble during difficult economic times (see Appendix 5.1). Given the situation, each person is asked how they would respond under four conditions (2x2): their money is held in the troubled bank (or not); and their money is protected by a government-backed organisation (or not). For each of the four scenarios, the person is given two choices of action: “Immediately withdraw your money” (run); or “Find out more before you decide what to do” (don’t run).

In the basic scenario, the information about the bank in trouble is shown as an exchange among family and/or friends. We don’t know whether other scenarios might create slightly different reactions, nor could we pose the question within this study; but we did get information about the relative credibility of seven different sources for learning about the bank in trouble. This may help inform future work.

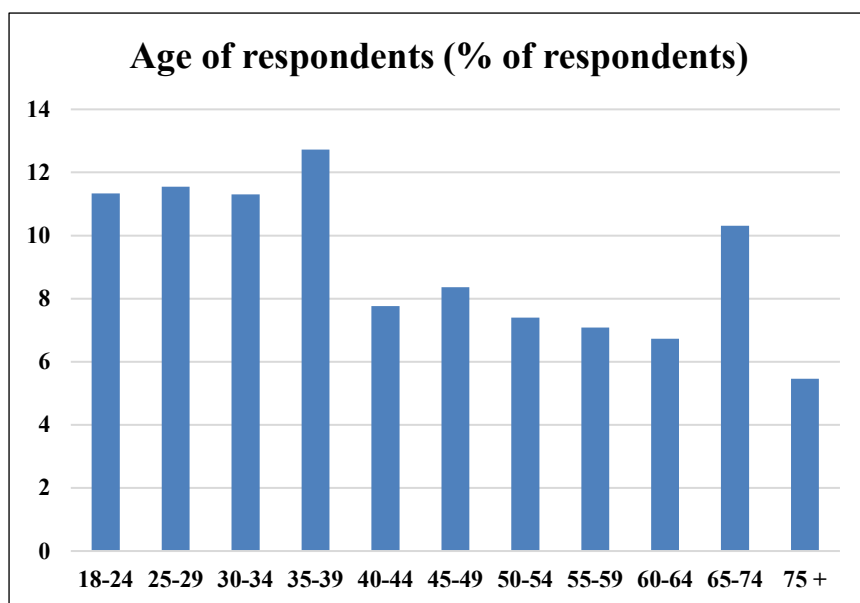
In total, the study collected 30 distinct items of information from each person. It was a quick and easy survey, taking only about five minutes to complete. Response to every question was mandatory but some personal questions (e.g., household income) offered the option of saying “I prefer not to answer”. Once a person qualified, almost all completed the survey.

Other than descriptive statistics, our analysis consists of a few two-way crosstabulations and an extensive set of logistic regression analyses. While country was a variable in our dataset, the sample size for each country is not sufficient to generate a run model for each country. Instead, we have created a dummy variable for each country and used these in all our logistic regressions to control for country differences. It is worth noting that we also ran ordinary least squares regressions for all analyses which led to the same conclusions as the logistic regressions. We chose to show the logistic regression because it is more informative. The odds ratio generated in each analysis is a very good guide to the impact of each significant variable.

2.1 The Sample

Within each country, we aimed to sample the population by age and sex in a manner that roughly approximated their census distribution. Because the global panel (Momentive/Survey Monkey) largely followed this distribution, the task was somewhat simplified. These are the most fundamental groupings in the census distributions of all seven countries. There are three reasons we did not consider other demographics for sampling: there was no a priori reason to add other specific demographics; each additional demographic raised project cost; and most significantly, sample pools available in each country made further specification practically impossible.

Figure 2: Age of respondents (% of respondents)



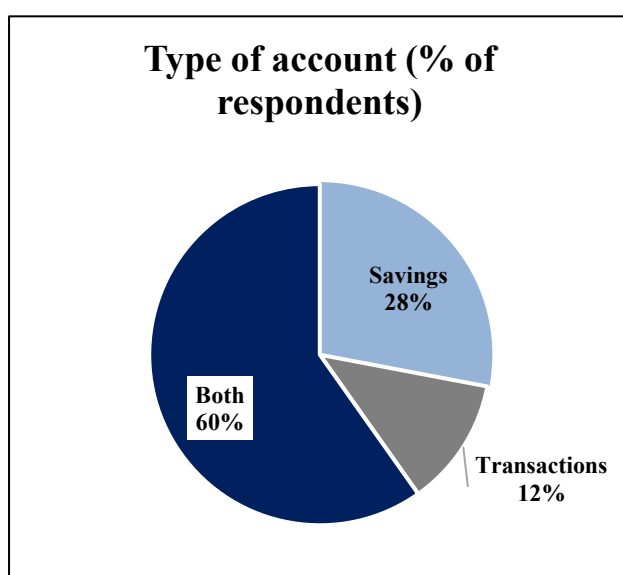
Because our analysis is not on a country-by-country basis and some of the results are demographic, it is useful to understand the composition of the study sample as a whole.

About one-third of our sample (34%) is between the age of 18-34; another one-third (36%) are age 35-54; and the remainder (30%) are age 55 and over. The graphic below provides more detail.

Just over half of the sample (51.8%) are female with males slightly less than half the sample (48.1%). A small group of respondents (0.1%) did not identify as either male or female.

To qualify for the study, respondents had to have a bank account. The exact question they were asked was “Do you have an account at a bank or any other savings institution that you can use to save your money or to hold money you will use to pay for things”. Six out of ten respondents had an account that could be used for savings and transactions. Most of the remainder had a savings account. It was only in the bottom income category where most people had a single-purpose account.

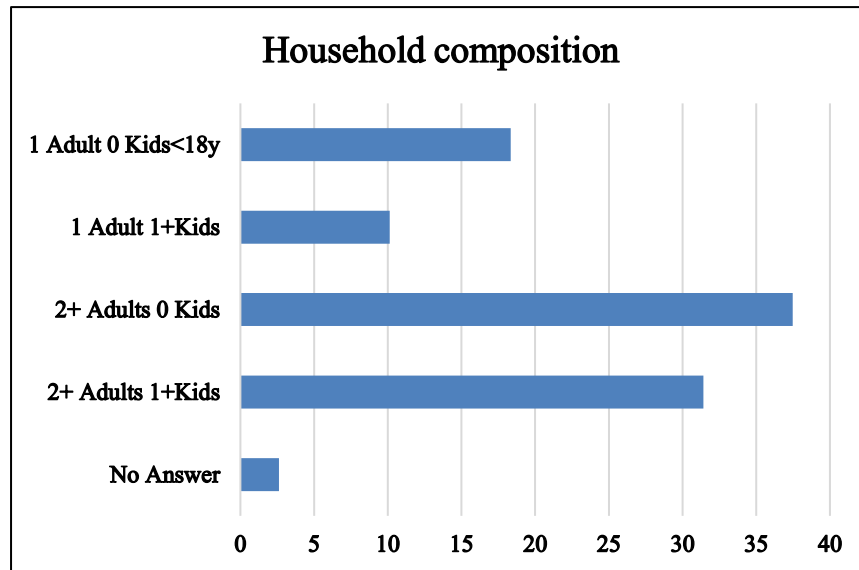
Figure 3: Type of account (% of respondents)



We didn't select respondents based on their household composition, but we did note it because prior unpublished work in Canada found this affected judgment of personal risk and hence run behaviour. Household composition is based on two variables: the number of adults in the household and the number of children under the age of 18. Roughly 7 out of 10 households had two or more adults while 4 out of 10 had children under the age of 18 at home.

The two remaining demographic indicators are economic and posed some challenge when looking at seven countries. The indicators are household income and accumulated financial

Figure 4: Household composition

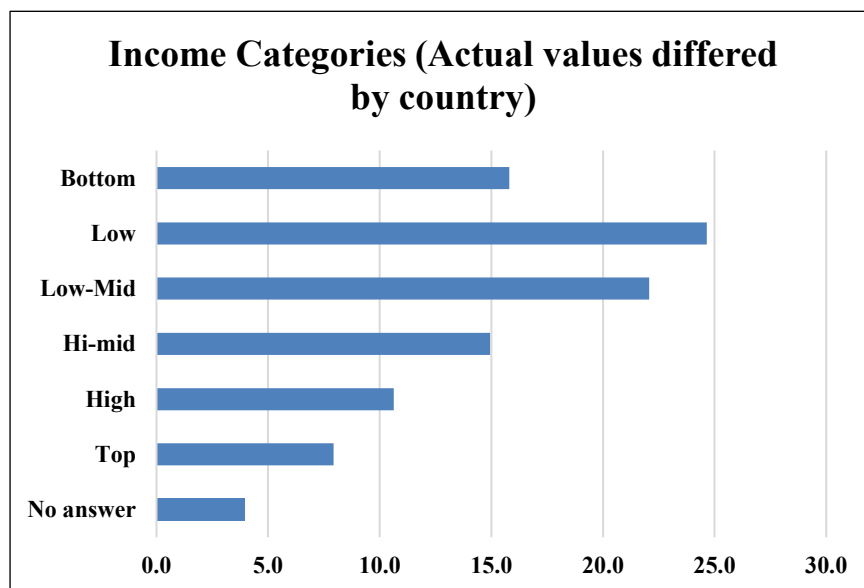


assets. Prior unpublished work in Canada indicated that both income and assets could affect judgments of personal risk and hence run behaviour. Quite simply, the loss of a small amount means far more to someone with limited income and no assets than it does to someone with either substantial income or substantial assets. With advice from Momentive/ Survey Mon-

key, we created six household income categories for each country. Our aim was not to equate monetary values, but rather to group people into six ordered income categories. While the category sizes were not identical across countries, the ordering was sufficient for analytical purposes. The exact values and percentages by country can be found in Appendix 5.2.

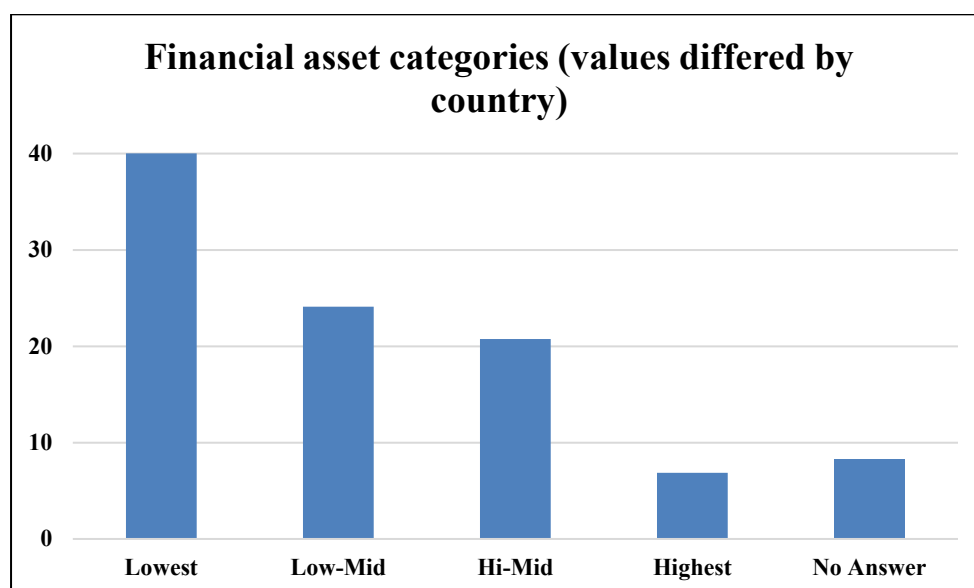
The financial asset categories were built on the income categories and the same rubric was used for each country. The lowest asset category was equal to the top of the second income level.

Figure 5: Income Categories (Actual values differed by country)



The second asset category went up to the top of the fourth income level. The third category was five times this amount, and the top category was above that. Once again, the category sizes were not identical across countries, but the ordering was sufficient for analytical purposes. The exact values and percentages by country can be found in Appendix 5.2. Here is the grouping overall.

Figure 6: Financial asset categories (values differed by country)



3 Bank Run Behaviour

This chapter presents the findings from our survey-based experiment. The chapter consists of five sections plus this introduction. The first section (3.1) looks at how the two independent variables that define our experiment affect run behaviour. By “run”, we mean the immediate withdrawal of money from a bank, as opposed to finding out more before deciding what to do. Essentially, we want to understand the factors that provoke an immediate “flight” reaction. The most critical variable is whether the person believes their deposits are protected or not. The second variable is whether the person has their money in the bank with financial troubles or not, that is to say, whether their money is directly or indirectly at risk. Essentially this second variable examines the risk of bank run contagion.

The next three sections of the chapter deal with (3.2) trust, (3.3) awareness of deposit protection, and (3.4) key demographics. In each of these sections we take a common approach. First, we discuss the new variables introduced in the section. Sometimes we link these key variables to demographics like age to provide greater depth of understanding. We then look at how each of these new variables independently affects the propensity to run. Having identified the significant variables, we then combine the significant variables in a single logistic regression to understand their combined impact. In the final analysis within each section, we look at how these significant variables combine with deposit protection and bank used to affect the propensity to run. Note that dummy variables for country are used in all regression analyses to help control for a range of consistent differences between countries, even though the dummy variables are not shown in the results.

The final set of findings looks at the relative credibility of different media sources for informing a person about a bank’s financial problems. We also look at how credibility relates to age, which is a key variable for media placement. This helps to understand how changes in the source of information in our scenario might potentially affect results. This is recognizably a critical issue for deposit insurers when faced with a potential bank failure.

One might reasonably expect a final regression model that combines all the variables we examine in this study. We have not included such a model because we believe it would be misleading. Our intent is to identify major issues and considerations that must be considered to prevent or limit an individual bank run. The limitations of a combined regression analysis would inevitably mask some critical issues that should not be overlooked, just because they correlate with other variables. Not knowing the direction of causality in such a relationship, nor whether there is an unidentified underlying factor driving both variables, makes this practice hazardous in an exploratory study like this.

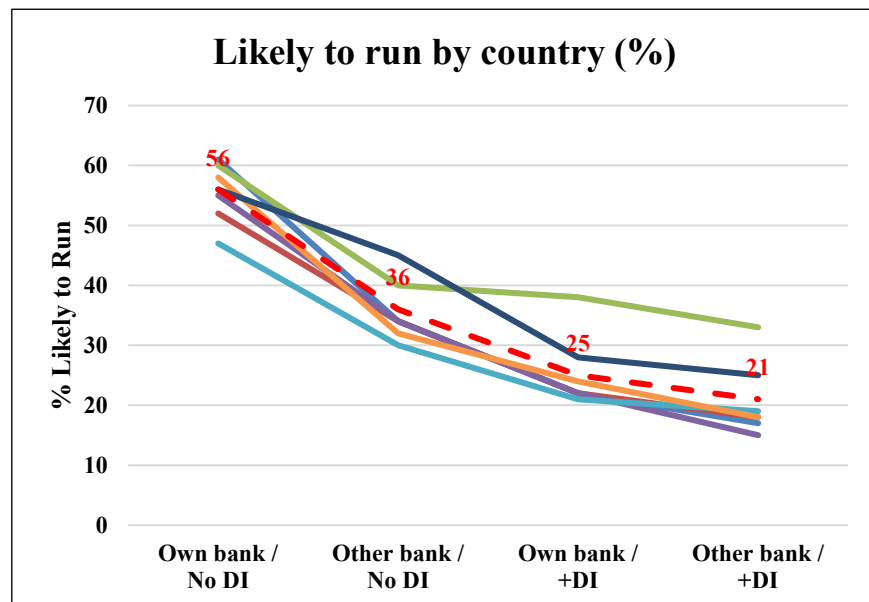
3.1 Deposit Insurance Protection & Bank Runs

While we do not show results for specific countries, both study authors independently noted that relationships between the variables in this study were remarkably consistent across countries. If we had a line or curve showing a relationship between variables, changing countries would typically not affect the shape of the line/curve, it would simply shift it up or down.

The most fundamental measure in this study is the proportion of people who would run their bank under the conditions described in the scenarios. The highest risk is when there is no deposit insurance and the person has their money in the troubled bank. Under those circumstances 56% would run their bank. This drops to 36% if their money is in another bank. If there is deposit insurance, the probability of a run declines to 25% even with money in the troubled bank. With deposit insurance, the probability of a run is only 4% lower at 21%, when money is in another bank. The graphic below shows this relationship for each of the seven countries in our study. The dashed red-line and red numbers are the average across countries. By country & scenario, the probability of a run ranges from 15% to 61%.

This figure reports the *Figure 7: Likely to run by country (%)*

percentage of respondents that are likely to run in each country under the four different scenarios presented to the respondents: 1. The bank run news is for one's own bank and there is no deposit insurance 2. The bank run news is for another bank and there is no deposit insurance 3. The bank run news is for one's own bank and there is deposit insurance, 4.



The bank run news is for another bank and there is deposit insurance. We do not report the names of the countries in the sample throughout the analysis.

As we will show in section 3.4, age has a major impact on propensity to run. The pattern of run behaviour is consistent across age groups. This further shows the critical role of deposit insurance in run behaviour, and to a lesser extent, the role of direct versus indirect risk. Note that under the riskiest conditions, when money is in the troubled bank and there is no deposit insurance, all four age groups respond identically. As the risk declines, older respondents are less likely to run. Just as a note, while we collected age information in five-year groupings, we combined them into four groups based on similarities in their run behaviour. The four age groups are: Age 18-29, 30-44, 45-59 and age 60+.

Figure 8: % Likely to Run by Age Group

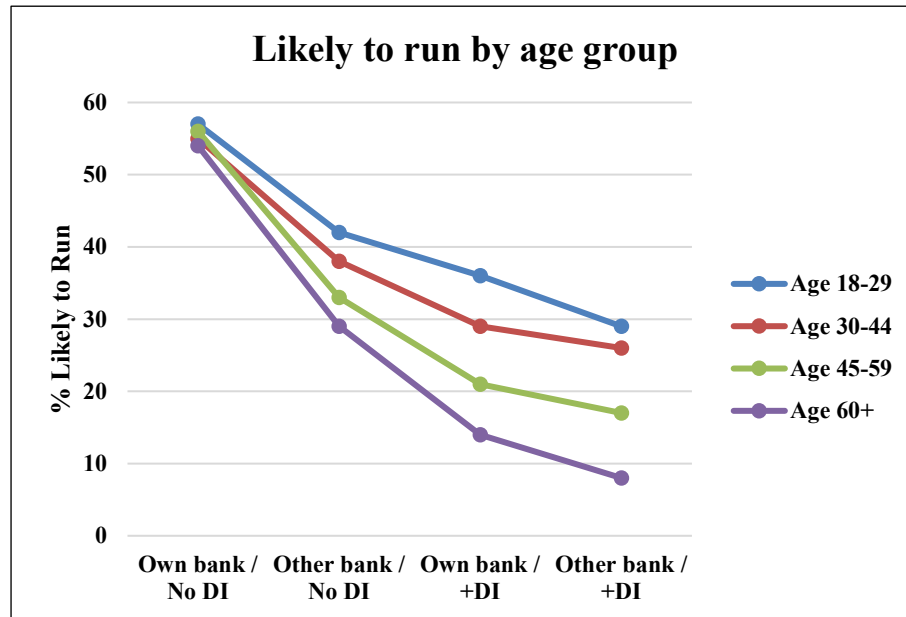


Figure 8 reports the percentage of respondents that are likely to run in each age group under the four different scenarios presented to the respondents.

The pattern of response in both prior graphics makes it clear that deposit insurance (DI) and money in the troubled bank/other bank both drive run behav-

our. This is confirmed in the three logistic regression results shown in Table 1. Model 1 shows that having money in a “troubled bank” raises the odds of running by 75% on its own. Model 2 shows that belief that deposits are protected lowers the odds of running a bank by 65% (i.e., $100*[1.00-0.35]$). Model 3 shows that both variables are significant at the $p < .001$ level and in combination they improve the variance explained (Pseudo R^2).

Table 1: Logistic Regression - Bank Runs and Deposit Insurance. Odds Ratios (ORs)

| Bank Run | Model 1 | Model 2 | Model 3 |
|-------------------|---------|---------|---------|
| Own Bank | 1.75*** | | 1.81*** |
| Deposit Insurance | | 0.35*** | 0.35*** |
| Constant | 0.56*** | 1.23*** | 0.92 |
| Country Controls | Yes | Yes | Yes |
| Pseudo R2 | 0.02 | 0.05 | 0.07 |
| N | 11,292 | 11,292 | 11,292 |

Note that the models are based on 11,292 observations although our sample is only 2,823. Each respondent was asked about their run behaviour in four different scenarios. Non-response was not allowed. This analysis treats each response as a separate observation.

3.2 Trust

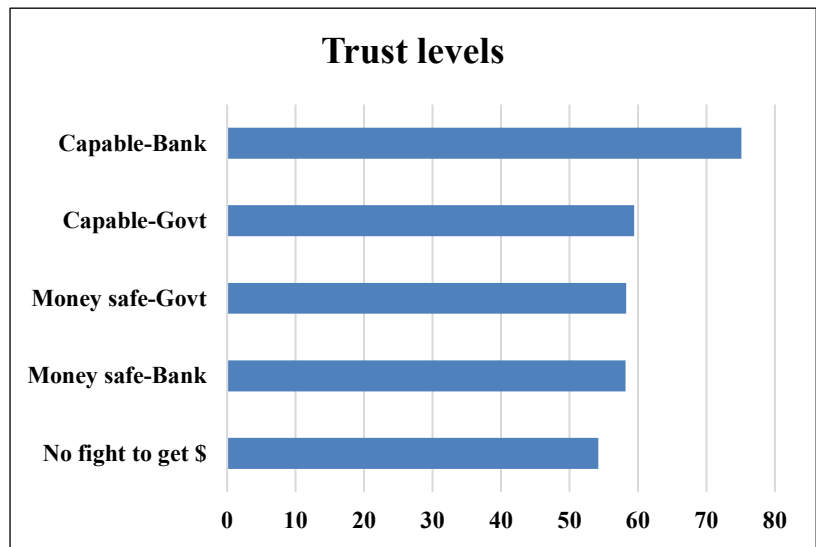
In his work on the Northern Rock crisis, Chater (2015) referred to three kinds of trust: Alignment, Benevolence and Competence. We grouped alignment and benevolence together, believing that both refer to a sense of trust that money is being safeguarded. When a bank is in trouble, our contention is that the public must trust both the bank and the organisation that protects deposits. In addition to these considerations, we note that convenience is often a decisive factor in responding to a bank in trouble (Brown et al, 2014; Iyer & Puri, 2012). With that in mind, we added a measure of trust that reflects convenience or the lack of it.

These considerations led us to develop five measures of trust. For each measure, respondents saw the sentence below and its opposite. Bearing in mind that all the countries involved either have or are establishing a form of deposit protection that is in some way associated with central government, as well as the fact that the deposit insurer itself is often not known by name, we linked the deposit insurer and government in our trust statements. People were asked to identify “Which is closest to your point of view”, the statement or its negative version. Bear in mind that these sentences are interpreted with the perspective of a retail depositor. We suggest that a positive endorsement of a trust statement should be interpreted as a retail investor believing “I am protected”. We have abbreviated these sentences in the charts. The key phrase and its abbreviation are as follows.

1. Capable-Bank: I trust my bank can handle the financial problems that come with tough times.
2. Capable-Govt: I trust the Government can successfully deal with a bank failure.
3. Money safe-Govt: If my bank went out of business, I trust that the Government will make sure that I get back the money in my savings/chequing account.
4. Money safe-Bank: If my bank was having financial problems, I trust that the bank would make sure that my money was safe.
5. No fight to get \$: If my bank fails, I trust that I will get my money back without a fight.

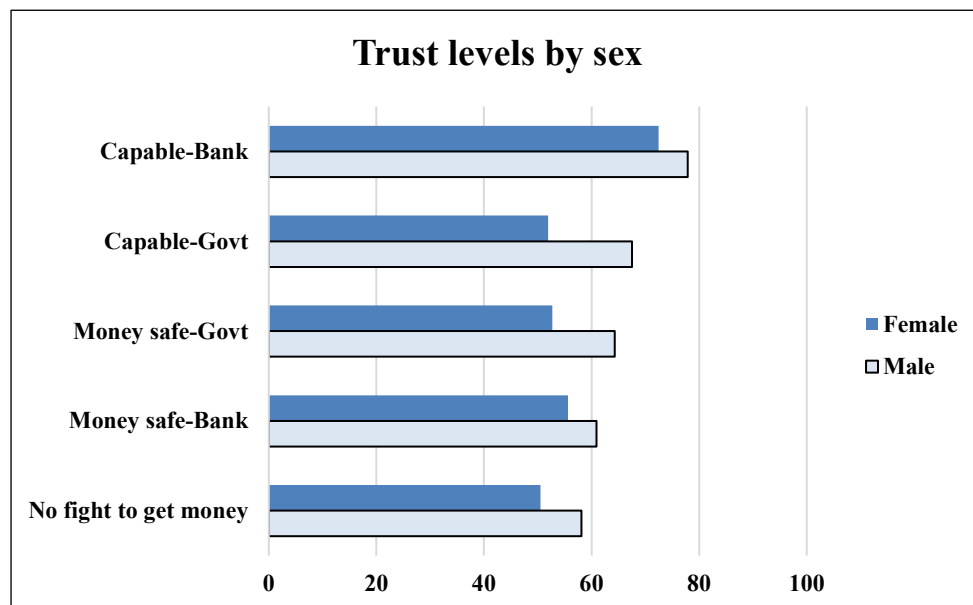
The sentences are not exactly parallel for bank and government, but they provide a sense of what someone might reasonably expect. It is worth noting that the third statement is essentially trust in government-backed deposit protection. As Figure 9 shows, we listed the five trust statements from highest level of trust to lowest. Having said that, the top level of trust is that their bank can handle the financial problems that come with tough times (75.1%). This is in many ways a measure of confidence in the banking system.

Figure 9: Trust levels



There is a demographic component to trust. People aged 60 and over are somewhat more trusting (~5%), while younger age groups are about equal. The most consistent and material differences are by sex. **For every trust measure, women are significantly less trusting than men by an average of 9%** (Figure 10). This has an implication for run behaviour, because as we will show, run behaviour is significantly related to trust.

Figure 10: Trust levels by sex



3.2.1 Trust and Bank Run Behaviour-Tabulations

Leaving these preliminaries, we address the key question of how trust measures relate to run behaviour. Table 2 provides a summary of several two-way tabulations analysing the relationship between each trust measure and run behaviour. Note that these tables present average for our two by two design of four scenarios (1.a. Deposit insurance exists or b. does not exist and 2. A. the money is in troubled bank or b. in another bank)

Panel 1 shows how trust in the safety of government and banks (Trust Questions 3 & 4) affects run behaviour. The results for government and banks are virtually identical with no comparative number differing by more than 1%. Both measures indicate that trust in the safety of money decreases the probability of a run by 9-10%.

Panel 2 shows how trust in the competence/capability of government and banks (Trust Questions 1&2) affects run behaviour. While both trust measures are significantly related to run behaviour, trust in government competence lowers the probability of a run by about 9%, while trust in bank competence lowers the probability of a run by about 15%. This difference should be viewed through two filters. First, trust in bank capability is higher than any other type of trust. Second, we do not know how fast trust in the bank will disappear if the bank is definitively failing. The experience of Northern Rock suggests the erosion can happen quickly. The absence of clear information about the speed that trust declines is a limitation on this study but Northern Rock suggests it is fast. One potential response is to assume that this type of trust vanishes immediately and use that assumption to guide any expectation of run behaviour.

Panel 3 shows trust in getting money back without a fight. Looking back at Panel 1, we find these results are comparable. Trust here results in a roughly 10% lower probability of a run across scenarios. We note that three-quarters of people provide the same rating for getting money back and safety. This is far more than chance.

The odds are very similar in all three panels, suggesting that a single underlying sense of trust pervades these judgments.

Table 2: Trust and bank run behaviour: Crosstabulations

| Panel 1: Trust in Safety provided by Institution and Bank Run | | | | | | |
|--|----------------------------------|--------|--------|----------------------------|--------|--------|
| | <i>Government Protects Money</i> | | | <i>Bank Protects Money</i> | | |
| | No-trust | Trust | Total | No-trust | Trust | Total |
| Stay | 60.7% | 69.3% | 65.7% | 59.8% | 70.0% | 65.7% |
| Run | 39.3% | 30.7% | 34.3% | 40.2% | 30.0% | 34.3% |
| Total | 100% | 100% | 100% | 100.0% | 100.0% | 100.0% |
| Pearson Chi ² | 90.12 | | | 127.02 | | |
| P= | p<.0001 | | | p<.0001 | | |
| Panel 2: Trust in Competence and Bank Run | | | | | | |
| | <i>Government Competence</i> | | | <i>Bank Competence</i> | | |
| | No-trust | Trust | Total | No-trust | Trust | Total |
| Stay | 60.6% | 69.2% | 65.7% | 55.6% | 69.1% | 65.7% |
| Run | 39.4% | 30.8% | 34.3% | 44.4% | 30.9% | 34.3% |
| Total | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| Pearson Chi ² | 90.12 | | | 171.53 | | |
| p= | p<.0001 | | | p<.0001 | | |
| Panel 3: Trust in getting one's money back without a fight | | | | | | |
| | No-trust | Trust | Total | | | |
| Stay | 60.5% | 69.2% | 65.7% | | | |
| Run | 39.5% | 30.8% | 34.3% | | | |
| Total | 100.0% | 100.0% | 100.0% | | | |
| Pearson Chi ² | 115.2 | | | | | |
| p= | p<.0001 | | | | | |

3.2.2 Trust and Bank Run Behaviour-Logistic Regression

We run the following regression (equation 1) to relate the probability of running a bank to trust of financial consumers:

$$Bank\ Run = \beta_0 + \beta_1 X (1) + controls + country + \varepsilon$$

where Bank Run=1 if the subject states they will run and Bank Run=0 otherwise. β_0 is constant. β_1 is a vector of coefficient estimates of X, which is a vector of Trust variables including trust for government, bank, competence of government, competence of bank, and getting their money without a fight. There are two control variables: presence/absence of deposit insurance and use of the troubled bank or another bank. Country is a separate control that summarises the impact of the dummy variables for the country of the respondent ε is the error term. We fit a maximum likelihood dichotomous logistic model and follow Hosmer and Lemeshow (2000) in our estimations. We report the odds ratios (not the logit coefficients).

Table 3 shows how each of the trust measures relates to run behaviour in a logistic regression. The five trust measures are shown as Models 1-5. Each model is statistically significant and they are comparable in their explanatory power. Each of the trust measures dramatically reduces the probability of a run. With country controls built into all of these regressions, we see that **the odds of a bank run is reduced by an average of 40% across trust measures.**

Model 6 provides a more comprehensive view because it looks at the impact of trust when people know whether they have deposit insurance and whether their money is in the bank that is in trouble. **The model shows that trust significantly impacts run behaviour, even knowing about deposit insurance and whether your money is directly at risk.** As we will see in every analysis, belief that deposits are protected (as stated in our scenario) lowers the odds of a bank run by 66%, while having money in the troubled bank increases the odds of a run by 84%. Regardless of DI and which bank holds the person's money, trust measures can lower the odds of a run by 17-32%.

Note that trust in government is not statistically significant in Model 6. That is because once we have specified that there is government-backed deposit insurance, that supersedes the impact of our independent trust measure. **Supplementary analysis shows that awareness of actual deposit protection in a jurisdiction affects the measure of trust in government. A full 70% of those aware of deposit protection in their own jurisdiction trust government protection versus 39% trust for those who are not aware** (supplementary analysis- not shown here).

Table 3: Trust and Bank Run Behaviour-Logistic Regression. Odds Ratios (ORs)

| Bank Run | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|------------------------|---------|---------|---------|---------|---------|---------|
| Trust in Government | 0.64*** | | | | | 0.93 |
| Trust in Bank | | 0.59*** | | | | 0.79*** |
| Trust Gov Competence | | | 0.63*** | | | 0.83*** |
| Trust Bank Competence | | | | 0.54*** | | 0.68*** |
| Trust in without fight | | | | | 0.61*** | 0.81*** |
| Deposit insurance | | | | | | 0.34*** |
| Bank (own/other) | | | | | | 1.84*** |
| | | | | | | |
| Constant | 1.05 | 1.09 | 1.08 | 1.25*** | 1.06 | 2.06*** |
| Country Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Pseudo R ² | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.09 |
| N | 11,288 | 11,288 | 11,288 | 11,288 | 11,288 | 11,288 |

Note: The odds ratio is the probability of a run when the variable=1 (i.e., there is trust) divided by the probability of a run when the variable=0 (i.e., no trust).

*** p<.0001

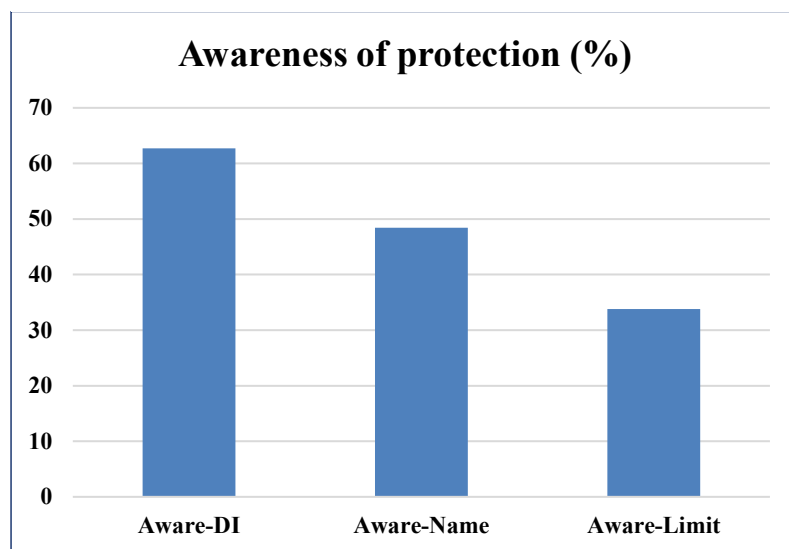
3.3 Awareness of Deposit Insurance

The questions about deposit insurance were prefaced by the instruction “In the following questions, we want you to think about how things work in <country name>”. There were three questions on deposit insurance that are part of awareness (see Appendix 5.1).

1. **DI Awareness:** If a bank where you had deposits went bankrupt, would your savings with that bank be protected. (Yes, except in New Zealand). Note that NZ was the only country that did not have an active deposit insurer at the time of the study. Despite that fact, 45% of NZ respondents believed that they had deposit insurance already, which is not far behind some countries that do have deposit insurers.
2. **Insurer Name:** Have you heard of <acronym> (full name of deposit insurer)? It is the organisation in your country that protects your deposits. (Altered to new deposit insurer in NZ, who will provide...)
3. **Limit:** Deposit insurers sometimes set a maximum amount of money in eligible deposits that they will insure. The limit is one of the five following amounts. Which one do you think is correct in <country name>?

There was a fourth question that asked if they had heard of “deposit insurance” prior to the survey. We discarded this question because responses indicated that DI was not a recognizable term in countries that named their organisation using words other than insurance (e.g., guarantee, protection, etc.). While we thought of deposit insurance as a generic term that would carry across countries, the data suggest that people only hear about the term used in their country.

Figure 11: Awareness of protection (%)



Overall, 62.7% are aware that their deposits are wholly or partially protected. A little less than half (48.4%) recognise their deposit insurer’s name (aided awareness). One-third (33.8%) correctly identify their country’s limit (or planned limit), but with five choices, we would expect 20% to get this right by chance.

While not shown, awareness measures differed dramatically by country. Excluding New Zealand which doesn’t

yet have deposit insurance, awareness of DI ranged from 50%-83%, awareness of the name of the deposit insurer ranged from 18-78%, and awareness of the limit ranged from 22-46%. Men claimed higher awareness than women.

Table 4 shows the relationship between awareness and age. Awareness of deposit protection (Panel 1) is about 61% until age 60, when it climbs a significant 8% to 69%. Aided awareness of the deposit insurer name (Panel 2) is significantly lower among young respondents (37%)

than in the two middle-age groups (50%). Older respondents again demonstrate higher awareness (56%). Panel 3 shows awareness of the DI limit and it doesn't follow an orderly age pattern, but we do find that the oldest respondents (40%) are more aware than the three younger age groups.

Table 4: Awareness of deposit insurance and Age in Bank Run Behaviour

| Panel 1: Awareness of Government Deposit Protection (%) | | | |
|--|-----------|-------|-------|
| Age Group | Not Aware | Aware | Total |
| 18-29 | 39.6% | 60.4% | 100% |
| 30-44 | 39.2% | 60.8% | 100% |
| 45-59 | 39.1% | 60.9% | 100% |
| 60+ | 30.7% | 69.3% | 100% |
| Total | 37.3% | 62.7% | 100% |
| Pearson Chi ² | 60.7 | | |
| p= | p<.0001 | | |
| Panel 2: Awareness of Deposit Insurer Name (%) | | | |
| Age Group | Not Aware | Aware | Total |
| 18-29 | 62.8% | 37.2% | 100% |
| 30-44 | 49.9% | 50.1% | 100% |
| 45-59 | 50.0% | 50.0% | 100% |
| 60+ | 44.2% | 55.8% | 100% |
| Total | 51.6% | 48.4% | 100% |
| Pearson Chi ² | 192.2 | | |
| p= | p<.0001 | | |
| Panel 3: Awareness of Deposit Insurance Limit (%) | | | |
| Age Group | Not Aware | Aware | Total |
| 18-29 | 70.4% | 29.6% | 100% |
| 30-44 | 65.0% | 35.0% | 100% |
| 45-59 | 69.4% | 30.6% | 100% |
| 60+ | 60.3% | 39.7% | 100% |
| Total | 66.2% | 33.8% | 100% |
| Pearson Chi ² | 73.9 | | |
| p= | p<.0001 | | |

3.3.1 Awareness and Run Behaviour-Crosstabulations

Table 5 shows the relationship between awareness of actual deposit protection within a country and run behaviour within our scenario. It is important to understand that these figures are averages across our four scenarios. While two of the three analyses are statistically significant, the small differences in propensity to run are less than 3%. This indicates that people responded to the statements about deposit protection in the scenarios. At the same time, the enormous variation in awareness levels by country may have overwhelmed the impact of prior awareness.

This will be clear when we look at the logistic regression, which takes account of country differences.

Table 5: Awareness of DI and Bank Run Behaviour-Crosstabulations

| Panel 1: Awareness of Government Deposit Protection (%) | | | |
|---|-------------|-------|-------|
| | Not Aware | Aware | Total |
| Stay | 64.6 | 66.4 | 65.7 |
| Run | 35.4 | 33.6 | 34.3 |
| Total | 100 | 100 | 100 |
| Pearson Chi ² | 3.86 | | |
| p= | p<0.05 | | |
| Panel 2: Awareness of Government Deposit Insurer Name (%) | | | |
| | Not Aware | Aware | Total |
| Stay | 67.0 | 64.4 | 65.7 |
| Run | 33.0 | 35.6 | 34.3 |
| Total | 100 | 100 | 100 |
| Pearson Chi ² | 8.11 | | |
| p= | p<.0001 | | |
| Panel 3: Awareness of Government Deposit Insurance Limit (%) | | | |
| | Not Aware | Aware | Total |
| Stay | 65.6 | 66.0 | 65.7 |
| Run | 34.4 | 34.0 | 34.3 |
| Total | 100 | 100 | 100 |
| Pearson Chi ² | 0.13 | | |
| p= | p=0.71 (ns) | | |

3.3.2 Awareness and Run Behaviour-Logistic Regression

We run the following regression (equation 2) to relate the probability of running a bank to awareness of deposit insurance:

$$Bank\ Run = \delta_0 + \delta_1 Y (1) + controls + country + \varepsilon (2)$$

where Bank Run=1 if the subject states they will run and Bank Run=0 otherwise. δ_0 is constant, δ_1 is a vector of coefficient estimates of Y which is a vector of awareness variables including ex ante awareness about Deposit Insurance, Deposit Insurer name, and Deposit Insurance Limit. . There are two control variables: presence/absence of deposit insurance and use of the troubled bank or another bank. Country is a separate control that summarises the impact of the dummy variables for the country of the respondent ε is the error term. We fit a maximum likelihood dichotomous logistic model and follow Hosmer and Lemeshow (2000) in our estimations. We report the odds ratios (not the logit coefficients).

Table 6 below uses logistic regression to analyse the relationship between run behaviour and awareness measures. Each logistic regression includes country controls, so that the impact of country differences is differentiated from the awareness measures.

Models 1-3 all show the results of univariate regressions. While all three models are statistically significant, it is only awareness of deposit insurance that has a distinctive impact on run behaviour. Model 4 combines the awareness variables with the statement of deposit insurance coverage in the scenario, as well as whether the person has their money in the troubled bank. As in all scenarios, declaring there is DI reduces the odds of run behaviour substantially (65%) and having money in the troubled bank dramatically increases the odds of run behaviour (80%). Regardless of the scenario, knowing about deposit insurance in their own country lowers the odds of a bank run by 17%, even though we control for whether or not there is deposit insurance in the scenario. In our view, this serves to further confirm the importance of awareness of deposit insurance protection.

Table 6: Awareness and Propensity to Run a Bank. Odds Ratios (ORs)

| Bank Run | Model 1 | Model 2 | Model 3 | Model 4 |
|-----------------------|---------|---------|---------|---------|
| Aware-DI | 0.84*** | | | 0.83*** |
| Aware-DI Name | | 0.99** | | |
| Awareness-Limit | | | 0.97 | |
| Govt DI (scenario) | | | | 0.35*** |
| Own Bank | | | | 1.80*** |
| Constant | 0.86** | 0.74*** | 0.75*** | 1.07 |
| Country Controls | Yes | Yes | Yes | Yes |
| Pseudo R ² | 0.01 | 0.01 | | 0.07 |
| p= | p<.0001 | p<.0001 | p<.0001 | p<.0001 |
| N | 11,272 | 11,272 | 11,272 | 11,272 |

3.4 Demographic Influences on Bank runs

The sample demographics were shown in chapter 2, so they will not be repeated here. We will instead focus on the relationship between demographics and bank runs. The demographics of interest include:

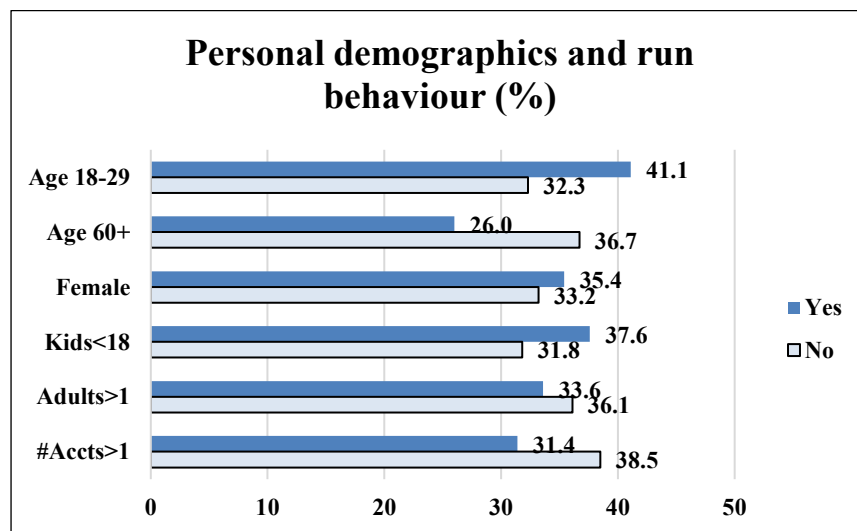
- Age (divided into four groups: 18-29, 30-44, 45-59, 60+)
- Sex (Female, Male)
- Number of adults in the household (1, 2 or more)
- Number of children under 18 years old (0, 1 or more)
- # Types of bank account (1,2)
- Household income relative to other respondents in their country sample (1-6)
- Financial assets relative to other respondents in their country sample. (1-4)

3.4.1 Demographics & Run Behaviour – Tabulations

In chapter 3.1, we looked at the relationship between age and run behaviour for each of the four scenarios we used. In this section, we are only looking at demographics across the four scenarios.

Figure 12 shows the probability of running for six demographic indicators. All indicators differ significantly in their run behaviour, but some make more of a substantive difference than others. For age, we have focused on the two extreme age groups to highlight that age has the biggest impact. Age 18-29 is 9% more likely to run (41.1%) than any other demographic, while those Age 60 and over are 11% less likely to run (26.0%) than other demographics. Sex makes very little difference (2%) nor does the number of adults in the household (3%). Those with kids under 18 are 6% more likely to run than others. People with multiple types of bank account are 7% less likely to run than those with just one type of account, but this is driven by household income differences.

Figure 12: Personal demographics and run behaviour (%)



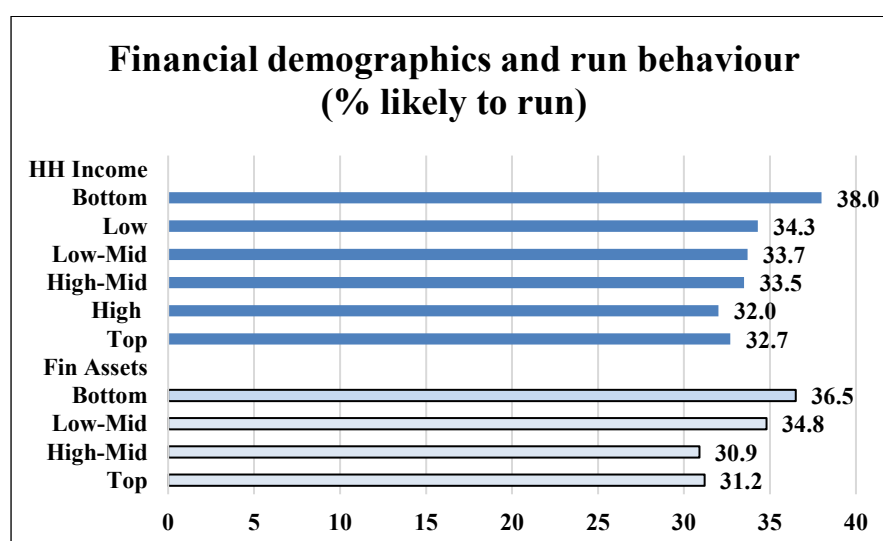
Note: Age 18-29: $X^2=68.17$, $p<.001$; Age 60+: $X^2=99.38$, $p<.001$

Sex: $X^2=6.03$, $p=.014$; Kids: $X^2=40.62$, $p<.001$

Adults: $X^2=6.58$, $p=.010$; Accounts>1: $X^2=60.42$, $p<.001$

Figure 13 looks at run behaviour and financial demographics. Both the household income and financial asset categories are just a ranking of the household within its country. While the questions were asked using the currency of each country, it is only the order of the categories that can be compared across countries. **Regardless, the probability of a run declines with both household income and financial assets, even though those households are likely to hold more bank assets. For financial assets, there is a clear linear link between assets and DI awareness. The pattern is less clear for household income.**

Figure 13: Financial demographics and run behaviour (% likely to run)



Note: Income: $X^2=15.53$, $p=.008$; Fin Assets: $X^2=25.44$, $p<.001$

3.4.2 Demographics & Run Behaviour – Logistic Regression

The major difference for assessing the impact of demographics through logistic regression is that demographic variables are now explicit, while in other equations the impact of demographic differences forms part of the country controls. This helps to clarify the impact of the demographic variable.

We run the following regression (equation 3) to relate the probability of running a bank to demographic variables:

$$Bank\ Run = \gamma_0 + \gamma_1 D(1) + controls + \varepsilon \quad (3)$$

where $Bank\ Run=1$ if the subject states they will run and $Bank\ Run=0$ otherwise. γ_0 is constant. γ_1 is a vector of coefficient estimates of D which is a vector of demographic variables. There are two control variables: presence/absence of deposit insurance and use of the troubled bank or another bank. ε is the error term. We fit a maximum likelihood dichotomous logistic model and follow Hosmer and Lemeshow (2000) in our estimations. We report the odds ratios (not the logit coefficients).

Looking at the individual variables in Table 7 confirms that age has the biggest impact. Age 18-29 raises the odds of running a bank by 30% more than middle age, while the odds of running a bank for Age 60 and over is 32% less. Having children under 18 at home, which certainly has some age linkage, increases the odds of a run by 23%. Having two types of bank account decreases the odds of a bank run by 23%. By comparison, sex has a smaller impact with the odds of men running a bank 11% less than women. Lower income households are 13% more likely to run than middle or higher income. Households in the lowest category of financial assets have 15% higher odds of running than those with median assets, while households with above median assets have 12% lower odds of running. Within country analysis of financial demographics yields impacts ranging from half the magnitude shown here to twice this size.

When we create a model that includes all these demographics and country controls plus the scenario specifications of deposit insurance and the bank where deposits are held, we find that almost all demographics continue to be statistically significant. Sex, number of adults, high income and high financial assets are dropped from the model. As expected, the presence of deposit insurance lowers the odds of a run by 67%, while having money in a troubled bank raises the odds of a run by 83%. The impact of age, household income, financial assets, and multiple bank accounts are comparable to the univariate analyses. With everything else considered, including age, the impact of having kids under 18 increases the odds of running by 17% – still substantial.

Table 7: Demographics and Propensity to Run a Bank

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Young (18-29) | 1.30*** | | | | | | | 1.37*** |
| Old (60+) | 0.68*** | | | | | | | 0.70*** |
| Sex | | 0.89** | | | | | | |
| Kids <18y | | | 1.23*** | | | | | 1.17** |
| # Adults | | | | 0.92* | | | | |
| Two bank accounts | | | | | 0.77*** | | | 0.81*** |
| Lower Income | | | | | | 1.13* | | 1.13* |
| Higher Income | | | | | | 1.01 | | |
| Low Fin Assets | | | | | | | 1.15** | 1.19*** |
| High Fin Assets | | | | | | | 0.88* | |
| Deposit Insurance | | | | | | | | 0.33*** |
| Bank | | | | | | | | 1.83*** |
| Constant | 0.70*** | 0.79*** | 0.64*** | 0.86 | 0.84*** | 0.71*** | 0.74*** | 0.75*** |
| Country dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Pseudo R ² | .01 | .01 | .01 | .01 | .01 | .01 | .01 | 0.08 |
| p-value | p<.0001 | p<.0001 | p<.0001 | p<.0001 | p<.0001 | p<.0001 | p<.0001 | p<.0001 |

Note: Odds ratio requires the use of binary variables. The categories of age, household income and financial assets were converted to multiple binary variables. Several regressions were run with subsets of these binary variables to avoid problems of multicollinearity. The most informative analyses are included in this chart.

3.5 Sources of Information About Bank runs

In our base scenario for bank runs, we indicate that the information about the bank being in trouble comes from friends. One friend sends a picture of people they saw outside their bank that morning. Other friends join in and tell the person that their bank is in trouble and they have

even pulled their own money out. In sum, all the information about a bank being in distress comes from friends.

In a real-world situation, the information could come from a variety of sources: TV, radio, social media, and more. As the research literature indicates <insert references>, the source of information makes a significant difference to its credibility. While the complication of testing the credibility of different sources in our scenario was impractical, we wanted to get some guidance about relative credibility from the respondents.

With that in mind, we asked “The news of Bank ABC having problems came to you through a friend who heard about it. If the source of the information was different, would you be more, less, or equally likely to withdraw your money instead of waiting”. **We inferred that a source that makes a decision more likely is deemed to be more credible.** The message of the source is critical as is the message itself.

Figure 14: Source credibility compared to scenario

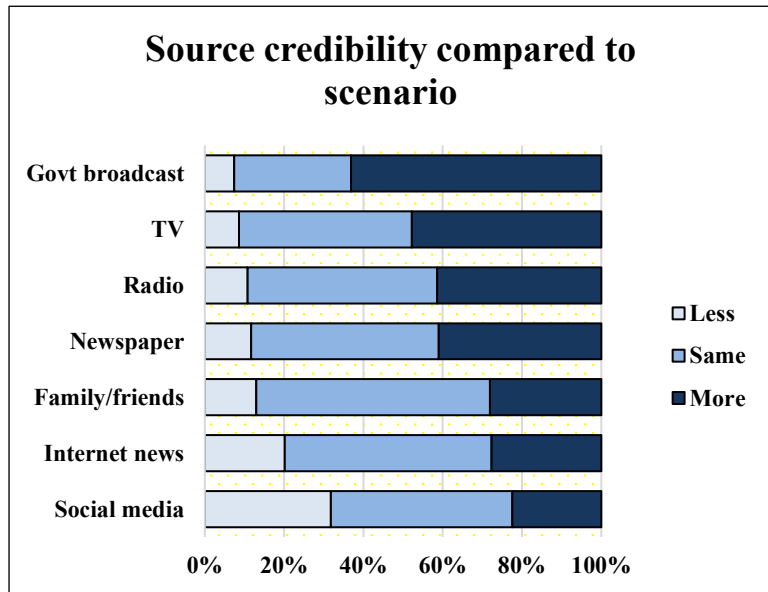
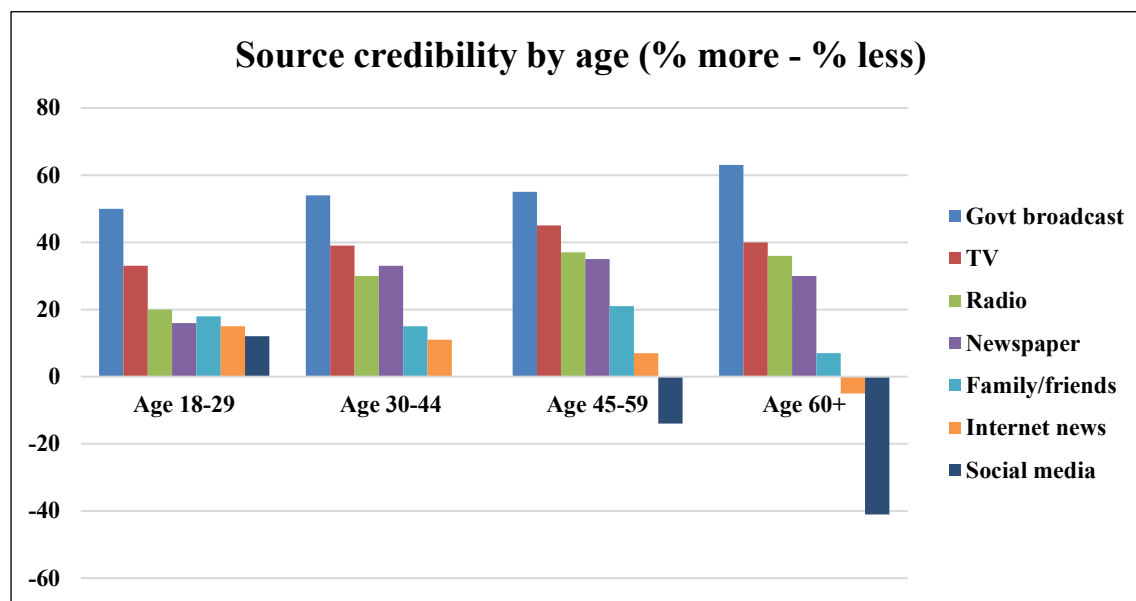


Figure 14 shows the credibility of seven different sources compared to the scenario. The three most credible sources are government broadcasts, TV, and radio. Newspapers follow close behind. When we look at internet sources, including internet news and social media, we find that these sources are less credible to the public.

Based on prior work, we thought it quite possible that the credibility of the sources would differ by age. To make comparison simpler, we looked at the Net Score generated by subtracting the % Less credible from the % More credible. The results are shown in Figure 15.

The most obvious difference is that social media and internet news are far more credible to those in the 18-29 age group. Their credibility declines with age. More surprising perhaps is the relatively low credibility of radio and newspaper in the 18-29 age group. The credibility of government broadcasts and TV cut across all ages, even though the exact numbers may differ. While there are country differences in response, an informal review suggests that the differences are aligned with the age distribution of their sample.

Figure 15: Source credibility by age (% more - % less)



Findings certainly suggest that a multi-source approach is needed to reach the public in a credible manner. Regardless of medium, being able to demonstrate government origin for the material adds to its credibility. This suggests an implicit recognition that government or supervisory authorities have early recognition of problems, so they are realistically deemed more credible.

4 Discussion

To the best of our knowledge, this is the first study of run behaviour that crosses seven countries. The similarity of response across countries to the two key variables (i.e. assurance that money is protected and whether money is in a troubled bank) is clear. The scenario that prompted the lowest probability of a bank run was knowing that there is government-backed deposit insurance and having one's own money in a bank that is not "in trouble". Even in these best of circumstances, if a bank is in big trouble, the probability of a person withdrawing their money from another bank is too big to ignore at around 20%. In the worst circumstances, when money is in a failing bank and the person is not aware of deposit insurance, the 60% probability of an individual withdrawing their money means that fast action to stem these withdrawals is critical.

In a real sense, perceived risk is the driver of run behaviour. It isn't the existence of deposit protection alone that limits run behaviour, but rather the individual's awareness that their own deposits are protected by the government. If a person doesn't know they are covered, they behave as if they aren't. When there is no awareness of government deposit protection, money is perceived as far more at risk in a troubled bank than in any other.

Overall, awareness of deposit insurance is the single biggest factor in stemming withdrawals. Across scenarios, awareness of deposit insurance reduced the odds of a bank run by about 65%. In absolute numbers, that means when people are aware of deposit insurance, the percentage of people likely to withdraw their money immediately drops from 60% to the 20-25% range. Where it is in that range depends on whether a person's money is in a troubled bank or not. The impact of having money in a troubled bank is even bigger when the person is not aware their deposits are protected. Then it increases the likelihood of a withdrawal by more than 80%.

Perceived risk and run behaviour are influenced by demographics, especially age. Young adults (18-29) are far more likely to run than others, while older adults (60+) are far less likely to run. Young adults have less of a cushion than older people because they tend to have fewer financial assets and lower income. At the same time, they are more likely to have children under 18, so the risk is more than personal in that it extends to their whole family. Having kids makes the same situation look riskier. To extend these findings, it is likely that a country with a skew to a younger demographic will be at more risk of a bank run than a country with an older skew to their demographic.

The implication of these findings for action is that building awareness of deposit insurance is a step toward lowering the likelihood of a bank run, but even more, when there is a bank in trouble it is critical that the deposit insurer comes forward immediately and announces how it will protect people in clear and simple terms. Insuring that young adults and young families get this message is paramount because they are the most likely to immediately withdraw their money. The findings on media sources suggests that diverse methods of getting out the message are needed.

Some may react to these findings with a sense that if it is those with less money that take their money out, why bother building awareness. It is certainly true that those with more income and financial assets are less likely to immediately withdraw their money, but putting this finding in

context, it would still be 15-17% ready to withdraw their money even when there is deposit protection and about half if they weren't aware of DI. The proportion is lower but far too big to ignore.

There is another element to reducing perceived risk that we have not yet addressed and that is trust. When people trust the capability of their banks to deal with financial troubles and believe their bank will try to protect their money, they are less likely to withdraw their money. Similarly, if they trust that their government is capable of dealing with a bank failure and they know it has made a commitment to protect them through a deposit insurance regime, this trust helps limit immediate withdrawals. It is also clear that the expectation of getting at their deposits without a fight makes it less likely they will withdraw their money.

These findings have a few implications for action. The first is that a deposit insurer (DI) should build public trust in their banking system, as well as in themselves. Conversely, banks need to make their own efforts to show they protect deposits in concert with the DI. When there is a bank that requires intervention, it also means that the government must be explicit in showing that the bank is capable of still operating with the government's help (if that is possible) and that people will continue to have access to their money and the services that come with it. To the extent that a DI and a bank can jointly help make circumstances look like "banking as normal", trust will play a role in stemming withdrawals. The failure of Washington Mutual in the US and FDIC's handling of that is a good example of what is needed. The data we have suggests that this approach will hold up across countries.

4.1 *Limitations on this Study*

The most obvious limitation is that we are dealing with scenarios rather than real world events. While that is a limitation, it is likely that the behaviours we see for different scenarios and demographics will differ in amount more than fundamental nature.

A second limitation is the sample. We chose countries that could be easily reached by an online survey conducted in English. We did not rigorously balance regional, language or other concerns that can influence results by country. It is also our belief that we surveyed in countries where trust in government and the financial system is relatively high. Except for India, the demographics of the sample skew older than much of the world. Ultimately, these sample limitations mean that our model coefficients should not be used by any country without a bigger and more appropriate sample, even if the same variables are used.

Finally, we note that our scenarios are predicated on one method of telling people that there is a bank in deep financial trouble. The work on media sources and their credibility suggests that the nature of the response to the scenarios might well differ, depending on the source and content of the message. Having said this, we have no little doubt that age, awareness of government-based deposit protection, and whether the money is in a troubled bank would continue to be major drivers of run behaviour. What we have yet to learn is whether source of information has a major impact as well.

4.2 *Future Studies*

We would like to recommend the following future work to enhance the policy making institutions' capacity to prevent bank runs.

First, we worked with a limited sample from English speaking countries. This does not enable us to see bank run behaviour under different Deposit Insurance regimes nor to understand how trust in public institutions versus banks affects the propensity to run. Which regime to use is an important policy choice for every country. Within the institutional framework it is also important to see which parts of the institutional framework make bank runs more or less likely. There is a need to differentiate what is common across all countries and what is specific to a single country's deposit insurance regime in triggering a higher propensity to run a bank.

Second, each country has a unique institutional framework, demographic structure, economic levels, and belief systems that shape depositor behaviours. In-depth country studies can help each country identify policy variables that are significant for their specific environment. We believe that a thorough analysis of country-specific issues and how they relate to bank run behaviour would help local policy makers tackle bank runs effectively.

Third, we conducted this work from the perspective of the depositors. While it seems likely in our sample, we do not know if depositors generally equate deposit insurance with government. The argument that a Deposit Insurer should be credible through its funding by the member banks, not by governmental backing, is important. This requires further work for differentiation of the two. Distinguishing the relative importance of deposit insurance for reducing the likelihood of individual versus systemic bank runs also bears further examination.

Finally, the argument that bank runs are related to the cost and nature of action of the deposit insurer rather than the government bears further study, especially in cases where the deposit insurer is not a public institution. It may well be that deposit insurance cannot prevent or deal with a systemic bank run without intervention of "government". Perhaps the real added value of DI is in stemming individual bank runs. If we take this as the starting point the question becomes at what point the risk of a bank run shifts from the Deposit insurer to Government. Most systemic failures and related government intervention follow a single bank run. Further work on the identification of this break point where risk shifts to government can certainly affect policy. It is important to understand when depositors see a bank run as an issue with an individual bank and when contagion happens and the issue becomes systemic.

5 Appendices

5.1 Questionnaire

IADI BANK RUN STUDY (Note: Respondents do not see the headings)

< Insert Country Name >

This is a brief 5-minute survey aiming to get your views on some important financial issues. This is part of a seven country study. It is important that the views of a wide variety of people are included, so your views are important.

Screening

Before we get started, we want to ask you a few questions to be sure that you qualify for the study.

1. What is your age?
 - a. Under 18 years old [Terminate the interview]
 - b. 18-24 years
 - c. 25-29 years
 - d. 30-34
 - e. 35-39
 - f. 40-44
 - g. 45-49
 - h. 50-54
 - i. 55-64
 - j. 65-74
 - k. 75 years old or older

2. Which gender do you most identify with?
 - a. Man
 - b. Woman
 - c. Other

3. Do you have an account at a bank or any other savings institution that you can use to save your money or to hold money you will use to pay for things?
 - a. Yes, have an account for savings
 - b. Yes, have an account to pay for things
 - c. Yes, have an account for savings and paying for things
 - d. No [Terminate the interview]
 - e. Don't know/ Not sure [Terminate the interview]

Scenarios

We want you to think about an imaginary situation in your country. Imagine that times are tough. Unemployment is up. The stock market has dropped dramatically. Prices for things you buy every day are way up.

With this in mind, we are going to give you four different stories. In each story, we will ask you what you will do. When we change the story, we will highlight what is changed.

Now, imagine you are waiting to meet a friend, and while you are waiting you look at your phone. You see a photo and some comments from friends.



AG

Saw this outside my bank this morning. Anyone know what is happening?

MJ

Do you bank with them? If you do, grab your money and RUN! I heard some bad news about them this morning. I already pulled my money out.

SP

Wow, ABC Bank is going BANKrupt. If you have money with them, I suggest you take it out now and move it somewhere else... and fast!

<Randomise order of 4-7>

4. Your deposits are in ABC Bank. You are worried. There is a federal government¹ organisation which insures your deposits.

What do you do about your deposits? Do you...

- Immediately withdraw your money
- Find out more before you decide what to do

5. Your deposits are NOT in ABC Bank. You are still worried. There is a federal government¹ organisation which insures your deposits.

What do you do about your deposits? Do you...

- Immediately withdraw your money
- Find out more before you decide what to do

6. Your deposits are in ABC Bank. You are worried. There is No deposit insurance. Your deposits are not protected.

What do you do about your deposits? Do you...

- Immediately withdraw your money
- Find out more before you decide what to do

7. Your deposits are NOT in ABC Bank. You are still worried. There is No deposit insurance. Your deposits are not protected.

What do you do about your deposits? Do you...

- Immediately withdraw your money
- Find out more before you decide what to do

Trust Questions

Choose which of the two statements is closest to your view, A or B. <randomise order of a/b and Q8-12>

8a. If my bank went out of business, I **trust** that the Government will make sure that I get back the money in my savings/chequing accounts.

or

8b. If my bank went out of business, I **don't** trust the Government will make sure I get back the money in my savings/chequing accounts.

9a. If my bank was having financial problems, I **trust** the bank would make sure that my money was safe.

or

9b. If my bank was having financial problems, I **don't** trust the bank would make sure that my money was safe.

10a. I **trust** my bank can handle the financial problems that come with tough times.

or

10b. I **don't** trust my bank can handle the financial problems that come with tough times.

11a. I **trust** that the Government can successfully deal with a bank failure

or

11b. I **don't** trust the Government can successfully deal with a bank failure

12a. If my bank fails, I **trust** that I will get my money back without a fight

or

12b. If my bank fails, I **don't** trust that I will get my money back without a fight

News Sources

13. The news of Bank ABC having problems came to you through a friend who heard about it. If the source of the information was different, would you be more, less, or equally likely to withdraw your money instead of waiting?

<Randomise order of a-g>

- | | Less | Same | More | DK |
|---|------|------|------|----|
| a. On my usual TV news | | | | |
| b. By reading about it in the newspaper | | | | |
| c. On social media | | | | |
| d. Through an internet news feed | | | | |
| e. On radio news | | | | |
| f. Through a government announcement | | | | |
| g. Through other friends or family | | | | |
| h. | | | | |

Deposit Insurance Questions

In the following questions, we want you to think about how things work in **<country name>**.

14. If a bank where you had deposits went bankrupt, would your savings with that institution be protected?

Yes, completely

Yes, partially

No

DON'T KNOW / NOT SURE

15. Prior to this survey, had you ever heard of deposit insurance?

Yes

No

DON'T KNOW / NOT SURE

16. Have you heard of **<insert deposit insurer name and acronym by country>**? It is the organisation in your country that protects your deposits.²

Yes

No

DON'T KNOW / NOT SURE

17. Deposit insurers sometimes set a maximum amount of money in eligible deposits that they will insure. The limit is one of the five following amounts. Which one do you think is correct in **<insert country name>**?

<Show four amounts by country + No maximum>³

Additional Demographics

Now we would like to ask you a few final questions for classification purposes.

18. What was your total household income before taxes last year?
<Show six categories + Prefer not to answer. See appendix 5.2 for details>

19. Who lives in your household?

- ONE Adult – No children under 18
- ONE Adult – One or more children under 18
- Two or more adults – No children under 18
- Two or more adults – One or more children under 18
- Prefer not to answer

20. Thinking about all of the savings, investment and pensions your household owns but excluding real estate, would you say that your financial assets are worth:
<Generate 4 categories based on income categories + Prefer not to answer. See appendix 5.2 for details>

Thank you for participating in this survey. Your responses are part of an international study that will help create better protection for depositors in your country and others. The study is sponsored by the International Association of Deposit Insurers. For more information, please go to www.iadi.org

Footnotes

¹ Questions 4 & 5

- Australia: federal government
- Canada: federal government
- India: Federal Government
- Ireland: Central Bank-Authorised

- New Zealand: Central Government
- UK: government-backed
- USA: federal government

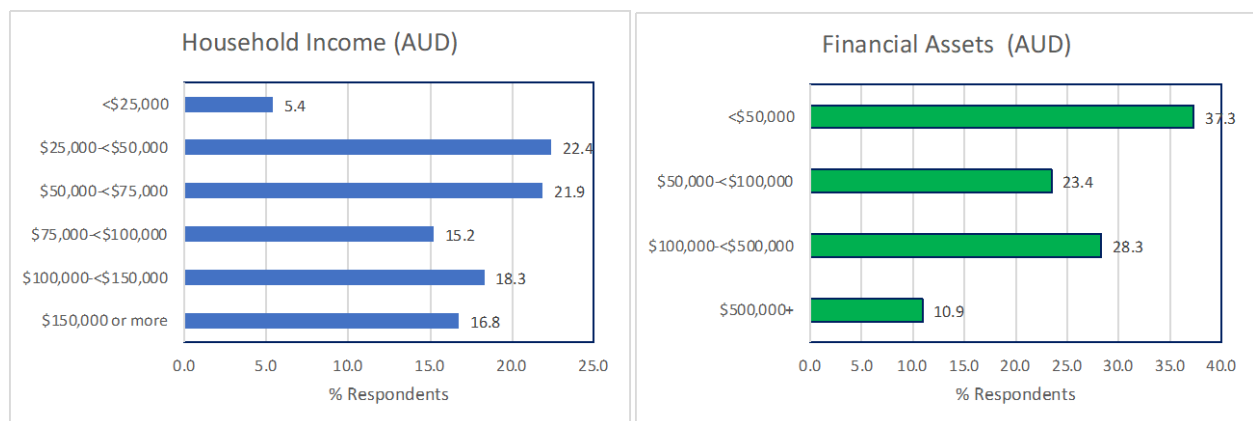
² Question 16

- Australia: Financial Claims Scheme (FCS)
- Canada: CDIC (Canada Deposit Insurance Corporation)
- India: DICGC (Deposit Insurance & Credit Guarantee Corporation)
- Ireland: DGS (Deposit Guarantee Scheme)
- New Zealand: Depositor Compensation Scheme (DCS) – proposed organisation
- UK: FSCS (Financial Services Compensation Scheme)
- USA: FDIC (Federal Deposit Insurance Corporation)

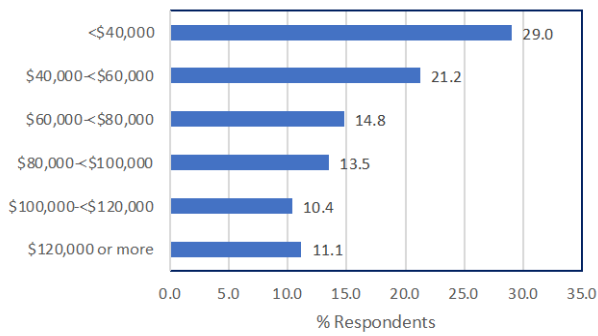
³ Question 17

- Australia: \$50,000; \$100,000; \$250,000; \$500,000; No maximum limit
- Canada: \$50,000; \$100,000; \$250,000; \$500,000; No maximum limit
- India: ₹ 1 lakh; ₹ 2 lakh; ₹ 5 lakh; ₹ 10 lakh; No maximum limit
- Ireland: €50,000; €100,000; €250,000; €500,000; No maximum limit
- New Zealand: \$50,000; \$100,000; \$250,000; \$500,000; No maximum limit
- UK: £45,000; £85,000; £125,000; £250,000; No maximum limit
- USA: \$50,000; \$100,000; \$250,000; \$500,000; No maximum limit

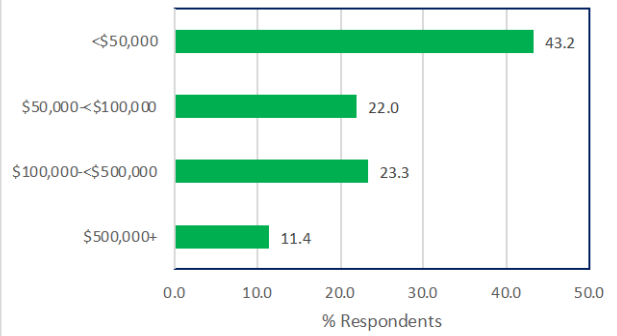
5.2 Household Income & Financial Assets by Country



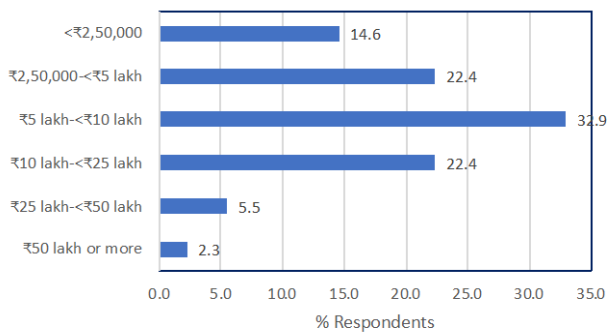
Household Income (CAD)



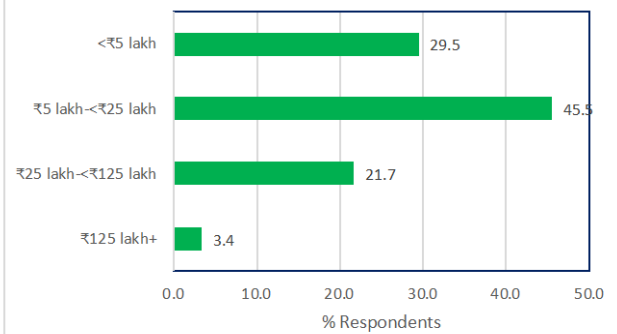
Financial Assets (CAD)



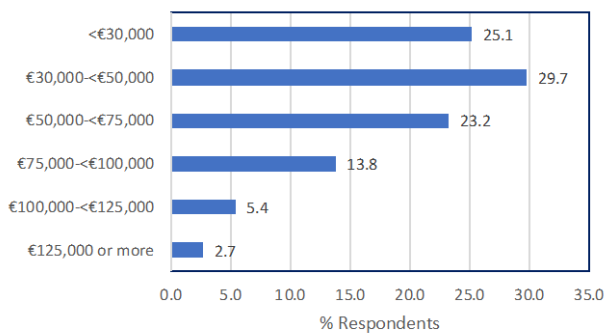
Household Income (INR)



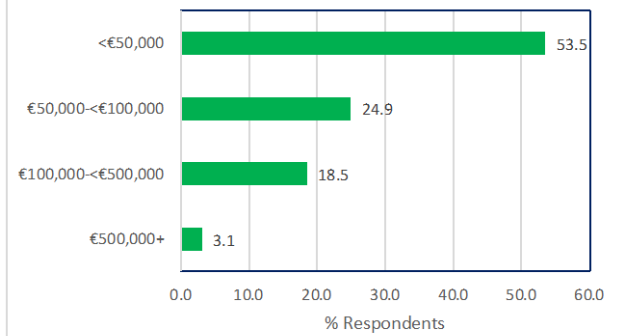
Financial Assets (INR)



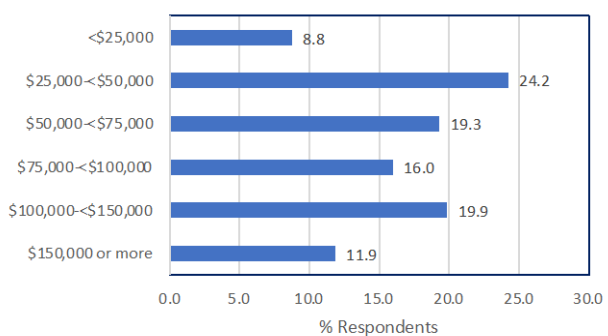
Household Income (Ireland)



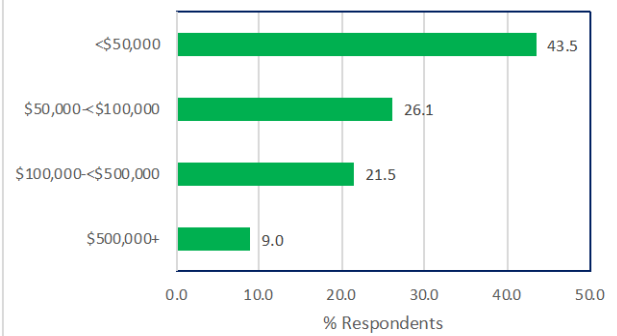
Financial Assets (Ireland)



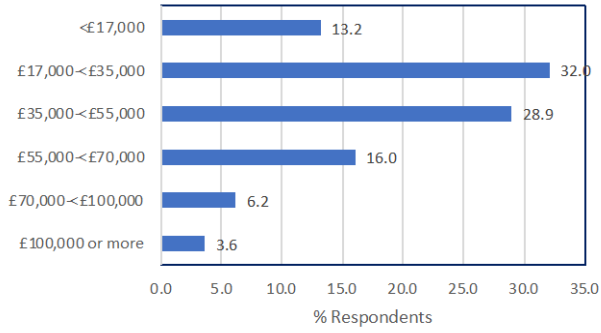
Household Income (NZD)



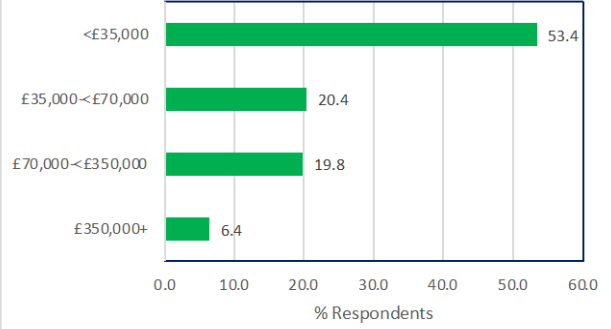
Financial Assets (NZD)



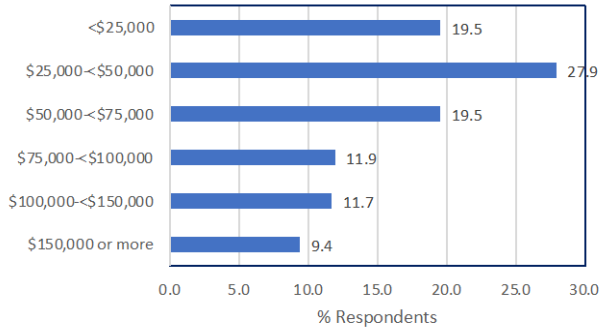
Household Income (GBP)



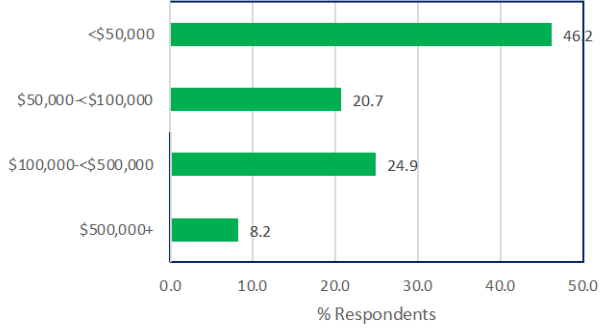
Financial Assets (GBP)



Household Income (USD)



Financial Assets (USD)



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