Non-Recourse Mortgage in South Korea : Risk and Opportunity

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CONTENT

I. Introduction

Background

- Mortgage borrower as a financial consumer
  - ❖ **Mortgage :** A debt instrument, secured by the collateral of specified real estate property, that the borrower is obliged to pay back with a predetermined set of payments.
  - ❖ **Mortgage borrower :** financial consumer

- Mortgage loans in South Korea are recourse loans.
  - ❖ **Recourse loan :** in case of default, a type of loan that allows the lender to go after the borrower's assets that were not used as loan collateral if the value of the underlying asset is not enough to cover it .
  - ❖ **Non-recourse loan :** in case of default, a type of loan that allows the lender to seize the collateral, but cannot seek out the borrower for any further compensation, even if the collateral does not cover the full value of the defaulted amount

I. Introduction

Background

- South Korea government (Ministry of Land, Infrastructure and Transportation) announced a plan to introduce a pilot non-recourse mortgage program in September 2014 (2014/09/01).

- The pilot non-recourse mortgage program is expected to activate in December 2015. (according to Ministry of Land, Infrastructure and Transportation)

- South Korean government expects the non-recourse mortgage to
  - ❖ protect the rights of financial consumers
  - ❖ enhance the responsibility of financial institutions

I. Introduction

Purpose of the study

- The purpose of the study:
  - ❖ to review the argument points of the non-recourse mortgage from the positive and negative aspects
  - ❖ to investigate the risk of the non-recourse mortgage in South Korea mortgage market
  - ❖ to examine how to share the risk of the non-recourse mortgage between the mortgage borrowers and lenders including financial institutions

II. Literature

Case-study (The United States)

- **The United States has the non-recourse mortgage programs.** (Harris, 2010; Zywicki et al., 2009)
  - ❖ Non-recourse mortgage states (10~15): AK, AZ, CA, CT, ID, MN, NC, ND, OR, TX, UT and WA
    - ✓ Prohibit to claim **deficiency judgement**
    - ✓ **Deficiency judgement**: A judgement levied against the borrower personally for the difference between the mortgage debt and the liquidation value of the property
  - ❖ Recourse mortgage states (40~35): AL, AR, CO, DE, DC, FL, GA, HI, IL, IA, IN, KS, KY, LA, ME, and etc.
    - ✓ Allow to claim deficiency judgement, but prefer **short sale** or **deed in lieu of foreclosure**
    - ✓ **Short sale**: the lender and borrower decide that selling the property and absorbing a moderate loss is preferable to having the borrower default on the loan.
    - ✓ **Deed in lieu of foreclosure**: A potential option taken by a borrower to avoid foreclosure under which the borrower deeds the collateral property back to the lender in exchange for the release of all obligations under the mortgage.
  - ❖ **FHA**, **VA**, or mortgages issued by public mortgage corporates (e.g. **Fannie Mae** and **Freddie Mac**) are **non-recourse** regardless of any state in the US. (Mixon, 2008; Cho, 2007)

II. Literature

Case-study (Others)

- **Canada** (Ghent and Kudlyak, 2011)
  - ❖ Recourse mortgage mostly, but some states including Alberta have the non-recourse mortgage programs (Jones, 1993; Ghent and Kudlyak, 2011)

- **European Countries:** Mortgage loans are **recourse** obligations in most European countries. (Lea, 2010)

  However, some countries try to make programs close to non-recourse, e.g.

  - ➢ **Spain**

    Datio in solutum : Some jurisdictions may provide that borrowers who cannot repay their mortgage loans are released in full from the underlying debt by handing their mortgaged property over to the lender. (London Economic, 2012)

  - ➢ **France**

    France has a number of different processes which consumers can use to prevent lenders launching an enforcement procedure. The most significant are Amicable process, debt moratorium, the over-indebtedness commission process. (London Economic, 2012)

  - ➢ **Island**

    A Central Bank Code of Conduct on Mortgage Arrears (CCMA) obliges mortgage lenders to consider a range of alternative repayment arrangements for borrowers in difficulty with the mortgage on their principal private residence . (London Economic, 2012)

II. Literature

Some issues in non-recourse mortgage

1. Arguments from the perspective of financial market stability

❖ Do non-recourse mortgages lead to increase in **strategic defaults ?**

Support

- ✓ Ghent and Kudlyak (2011): borrowers are 30% more likely to default in non-recourse states.
- ✓ Guiso, Sapienza and Zingales (2009): 26% of the existing defaults are strategic defaults.
- ✓ Ambrose, Capone and Deng (2001): non-recourse states have higher default rates.
- ✓ Hatchondo, Martinez and Sanchez (2013): the default rate of loans is lower in Europe (recourse) than the US (non-recourse).

Oppose

- ✓ Foote, Gerardi and Willen (2008): fewer than 10% of negative equity owners eventually lost their home to foreclosure.
- ✓ Bhutta, Dokko, and Shan (2010): the median borrower does not strategically default until equity falls to -62 percent of their home's value.
- ✓ Li and Oswald (2014): the deficiency law change state (Nevada) did not appear to have accepted mortgage default or house foreclosure outcomes.
- ✓ Mitman (2011), Harris and Meir (2012): overall default rates have not in fact been meaningfully higher in "non-recourse" states.

II. Literature

Some issues in non-recourse mortgage

1. Arguments from the perspective of financial market stability

❖ Does non-recourse law result in larger **bubbles in housing prices**?

Support

- ✓ Nam and Oh (2014): A state with non-recourse law creates a larger housing bubble during an economic expansion, and experiences a steeper decline in housing prices during an economic recession.
- ✓ Bao and Ding (2013): non-recourse states experience faster price growth during the boom period (2000-2006), a sharper price drop during the bust period (2006-2009). Moreover, the volatility of housing prices is higher in non-recourse states than in recourse states.

Oppose

- ✓ Mian and Sufi (2014): over liquidity could cause a housing market bubble.
- ✓ Li and Oswald (2014): the deficiency law change in Nevada contributes negatively and statistically significantly to lenders approval rate as well as mortgage loan size upon approval.
- ✓ Castilla (2011): the generalization of recourse mortgage has been a major booster of the Spanish real estate bubble (not non-recourse mortgage).

II. Literature

Some issues in non-recourse mortgage

2. Arguments from the perspective of protecting financial consumers

❖ Does non-recourse mortgage protect **financial consumers**?

Support

- ✓ London Economics (2011): the availability and use of personal bankruptcy and 'datio in solutum' solutions of mortgages as legal solutions to problems of 'over-indebtedness' faced by a number of consumers in the EU.
- ✓ Non-recourse mortgage development association in Japan (2011): personal bankruptcy requires more social costs and non-recourse mortgage raise the chance of recovery.
- ✓ HAFA (Home Affordable Foreclosure Alternatives) Program: provides homeowners the opportunity to exit their homes and be relieved of their remaining mortgage debt through a short sale or a deed-in-lieu of foreclosure (DIL) with $10,000 in relocation assistance. Provide a mortgage borrower with “peace of mind”.

❖ Does non-recourse mortgage enhance the responsibility of **financial institutions**?

Support

- ✓ Li and Oswald (2014):the deficiency law change in Nevada contributes negatively and statistically significantly to lenders approval rate as well as mortgage loan size upon approval.
- ✓ Nam and Oh (2014): LTV ratios lower whereas mortgage interest rates and denial rates are higher in non-recourse states than in recourse states.
- ✓ Castilla (2011) and Mixon (2008): They would be more cautious in the release of credit, rejecting overly optimistic valuations of the real estate collateral and decreasing the percentage of the appraised value of what they are willing to finance.

II. Literature

Some issues in non-recourse mortgage

3. Arguments from the perspective of enhancing social welfare

- Does non-recourse mortgage enhance **social welfare**?

  Support

  - ✓ Mitman (2011): comparing the bankruptcy of mortgage default and credit default, non-recourse mortgages reduce the overall bankruptcy.
  - ✓ Meir and Harris (2011): financial institutions are more efficient to manage the risk of house price volatility due to their specialty and experience.
  - ✓ Mixon (2008): collection of recourse mortgage is difficult to be bent on gain. When Non-recourse mortgages require the financial institutions to take the default risk more carefully, which strengthen the social trust.

4. Arguments from the perspective of the Principle of Change of Circumstances

- Can non-recourse mortgage be regarded as **the principle of change of circumstances**?

  Support

  - ✓ Park, Jung-Ki (2011): When there is a time difference between contract formation and its final performance, it is sometimes difficult to adhere to initial contractual terms due to changes in circumstance.

II. Literature

Pros of non-recourse mortgage

1. Protecting financial consumers (society to enable a consolation match)

- Reduce the possibility of credit default and raise the chance of recovery
- Lower the social security costs
- Present a mortgage borrower with "**peace of mind**"

2. Enhancing the responsibility of financial institutions

- Lead financial institutions to strengthen the ability to evaluate collateral property.
- Induce financial institutions to suppress issuing the risky loans

3. Enhancing social welfare

- Financial institutions are more efficient to manage the risk of house price volatility due to their specialty and experience.

4. Others

- Reduce the period and cost of managing the non-performing loans
- Enhance the trust as social capital

II. Literature

Cons of non-recourse mortgage

1. **Increasing the strategic default when the housing price significantly falls**
   - ❖ Raise the instability of housing and capital markets
   - ❖ Solution: control the LTV under the certain level

2. **Enhancing the demand of mortgage and bubbles in housing prices**
   - ❖ Create a larger housing bubble during an economic expansion, and experiences a steeper decline in housing prices during an economic recession
   - ❖ Solution: let financial institutions have more strict and provide a risk premium to the mortgage interest

3. **Others**
   - ❖ Less motivation to manage the collateral properties due to the possibility of strategic default

III. Data & Methodology

Theory

- **Expected loss**

$$EL = \text{PD X LGD X EAD}$$

- ❖ PD (Probability of Default): a borrower may not fulfil her financial obligations
- ❖ LGD (Loss Given Default): a lender may lose money from her borrower who already defaulted
- ❖ EAD(Exposure at Default): a total value that a lender is exposed at the time of default

- **In order for economic evaluation of a new non-recourse mortgage system, we need two estimated values: 1) PD and 2) LGD**
  - ❖ They tend to assume EAD as an unity
  - ❖ Expected Loss Rate= PD XLGD

III. Data & Methodology

Two approach and Data

1. Estimation of EL

1) PD

- Korean mortgage market data from the Financial Supervisor Services
- Quarterly default rates from 2007 to 2014

2) LGD

- Previous research such as Park and Bank (2012), which studies LGD during the period of financial turbulence (2006-2009)
- Recovery rate: industry experience

3) PD can be a function of mortgage systems

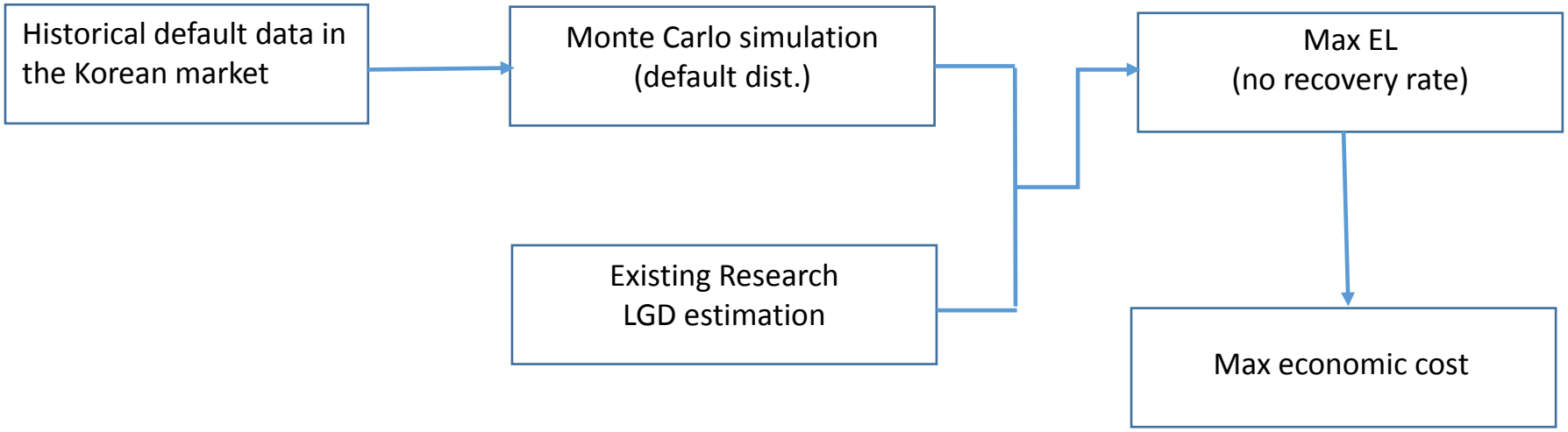
- Ghent and Kudlayk (2011): borrowers are “30% more likely to default in non-recourse states”

2. Myopic approach

- NHF: direct loss data from 2004 to 2008 (a loan level analysis is limited)

III. Data & Methodology

Procedures for EL estimation



- With no macro data available, we adopt very "cautious" approach
  - ❖**Historical default rates for the National Housing Fund are lower than those for general banks**
  - ❖**Data during the period of the Global Financial Crisis**
  - ❖**To evaluate economic cost of introducing the new non-recourse mortgage system, we assume that all the losses would be recovered**

IV. Results

Default rate

- Values at Risk using a Monte Carlo Simulation
  - ❖ Both symmetric and non symmetric distributions
  - ❖ Borrowers are “32%” more likely to default in non-recourse states (Ghent and Kudlayk, 2011)”

	Monte Carlo Simulation (non symmetric dist.)	Monte Carlo Simulation (non symmetric dist.& 32% more default)
Mean	0.527	0.696
95% VaR	0.729	0.962
99% VaR	0.816	1.077

IV. Results

Loss Given Default

- **Condominium 6.18% and house 7.92%**
  - Mortgages in a First Lien position from 2006-2009, as we analyze mortgages for NHF.
  - Park and Bank (2012)

Maximum economic cost with the new non recourse system

- **All the losses would be recovered** by the current recourse system
  - Even in the current system, lenders have financial damage from mortgage defaults
- But, to recover loss from defaulted loans, lenders incur **recovery cost**
  - Maximum expected loss = expected loss *recovery rate, where **recovery rate= 100%**
  - Maximum economic cost = expected loss *recovery rate* (1-**recovery cost rate**), where recovery cost rate = 15% (from industry practice)

IV. Results

Expected Loss and Expected Cost(unit: bps=1/100%)

		Maximum Expected Loss (No Recovery Cost)	Maximum Economic Cost (15% Recovery Cost)
Condominium		4.30	3.66
	95% VaR	5.95	5.05
	99% VaR	6.66	5.66
House		5.51	4.69
	95% VaR	7.62	6.48
	99% VaR	8.53	7.25

Economic Cost for the National Housing Fund (unit: bps)

	Average	95% VaR	99% VaR	비고
Market Data (maximum)	3.66	5.05	5.66	- Default rates are higher for non-recourse mortgage by 32% - All the losses would be covered - Recovery cost:15%
NHF Data	1.70			- Recovery cost:15% - By the current recourse system, 26.49% of loss are covered. - From 2004-2008.

V. Conclusions

Need of non-recourse mortgage in South Korea

- **(Financial consumers)** Protecting financial consumers and making a society to enable a consolation match
- (**Financial institutions)** Enhancing responsibility of financial institutions
- **(Social welfare)** Financial institutions more efficient to manage the risk of house price volatility
- **(Control moral hazard)** possible to control borrowers' strategic default (moral hazard)
- **(Paradigm shift)** have given more weight to protect financial institution rather than financial consumers, but need to change

V. Conclusions

Suggestions to introduce non-recourse mortgage in South Korea

1). Restricted non-recourse mortgage

- Non-recourse mortgage should be lent to a owner-occupied house buyer with low income household
  - ❖ Borrowers of "housing and urban government fund" meet the conditions
  - ❖ Low income household has low possibility of strategic default
- Restricted LTV and risk premium reduce the moral hazard (strategic default)

2). Structure of non-recourse mortgage

- Make the clauses in mortgage contract to protect the non-recourse mortgage lender
  - ❖ In case of fraud and fake documentation, non-recourse does not validate.
  - ❖ In case of vandalism to reduce the value of the collateral property, non-recourse does not validate.
- Require the borrower to have insurance to compensate the loss of non-recourse mortgage.
  - ❖ Partial and total insurance
  - ❖ Credit insurance vs. guarantee insurance

Thank you

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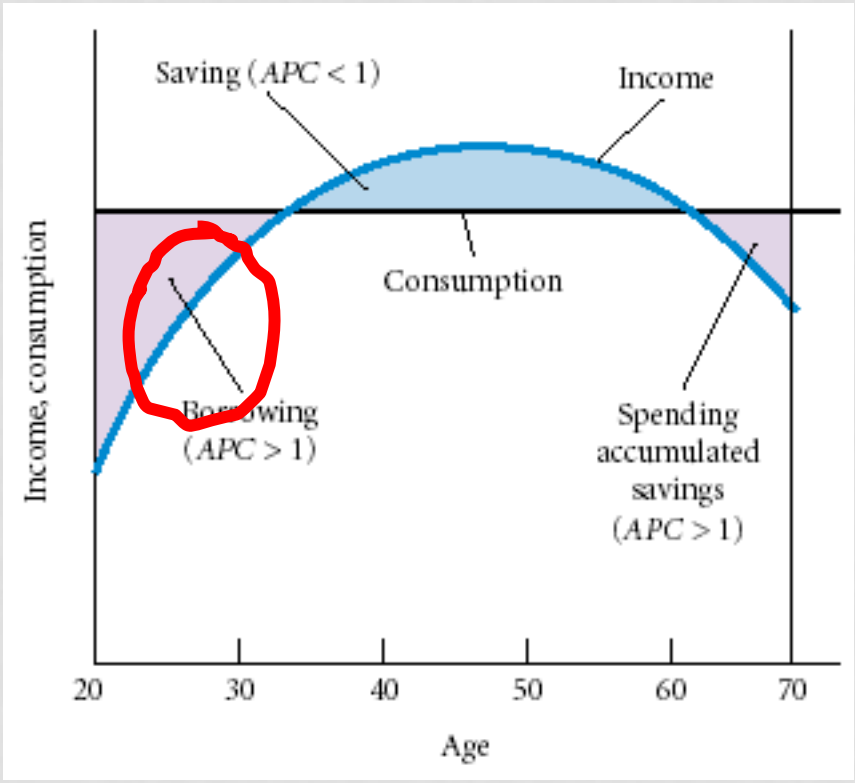
CONSUMER FINANCIAL KNOWLEDGE AND INTERACTION WITH DEBT INSTRUMENTS

EVIDENCE FROM THE UNITED STATES

THEORETICAL CONTEXT

- Life-Cycle Income Considerations
- Income Smoothing
- Complications?
- Uncertainty
- Capital Markets



INCOME SMOOTHING

- Credit Cards as a Market Instrument
- Credit Cards as a Spending Stimuli

- The Role of Consumer Knowledge
- Measured using a composite measure based on 6 financial knowledge questions:

SAMPLE QUESTION

- Which of the following credit card users is likely to pay the GREATEST dollar amount in finance charges per year, if they all charge the same amount per year on their cards?
- Someone who always pays off their credit card bill in full shortly after it is received
- **Someone who only pays the minimum amount each month (%)***
- Someone who pays at least the minimum amount each month, and more when they have more money
- Someone who generally pays their card of in full, but occasionally will pay the minimum when they are short on cash
- Don't know

EMPIRICAL MODEL

- $CCU = a + b_1K + b_2F + b_3X + e$
- Where K = composite knowledge
  F = Selected Financial Factors
  X = demographic characteristics

Credit Card Use Consisted of 5 separate behaviors scored on a Likert-type scale (1 = strongly agree, 5 = strongly disagree)
1: My Credit Cards are usually at their maximum limit
2: I always pay off my credit cards at the end of each month
3: I often make only the minimum payment on my credit cards
4: I am seldom delinquent in making payments on my credit cards
5: I seldom take cash advances on my credit cards

RESULTS

- Sample of 1,354 College Students
- Multinomial Regression was applied to indicate High, Medium or Low Risk Behavior for Five separate models
- Prediction of More Risky Behaviors
- Reference Category for Knowledge is Medium Knowledge Score

RESULTS

- **Model 1: Credit Card At Maximum Limit**
- High Knowledge Score: 42% less likely
- Low Knowledge Score: 106% more likely
- **Model 2: Always Pay Off Cards (non-revolver)**
- High Knowledge Score: NS
- Low Knowledge Score: 25% less likely
- **Model 3: Often Minimum Payment**
- High Knowledge Score: 49% less likely
- Low Knowledge Score: NS

RESULTS

- **Model 4: Seldom Delinquent**
- High Knowledge Score: 56% more likely
- Low Knowledge Score: 55% less likely
- **Model 5: Seldom Cash Advance**
- High Knowledge Score: 39% more likely
- Low Knowledge Score: 46% less likely

CONSIDERATIONS

- Data limitations
- Knowledge Conceptually
- Objective versus Subjective Knowledge

THE DATA

- National Financial Capability Study (2009 & 2012) sponsored by FINRA
- Both waves included a state-by-state survey component (all 50 states plus the District of Columbia)
- Pooled sample (n = 53,655)

EXPLORING RATIONAL BORROWING DECISIONS

- Neoclassical Model: **Fully Informed** consumers make **utility maximizing** choices among market alternatives
- **Optimal** Borrowing: least cost method
- Are all borrowers a reasonable fit for this model?
- Are there some borrowers who are making sub-optimal decisions?
- Bounded Rationality:
  - "Components such as individual knowledge and the ability to apply or draw from that knowledge in light of alternatives and uncertainty must be taken into consideration." (Simon, 2000)
- Accurate forecasts based on uncertainty and limited information (optimism)

MEASURING FINANCIAL KNOWLEDGE

- Objective Financial Knowledge
- **Question 1**
- Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think that you would have in the account if you left the money to grow?
- A) More than $102
- B) Exactly $102
- C) Less than $102

MEASURING FINANCIAL KNOWLEDGE

- Objective
- **Question 2**
- Imagine that the interest rate on your savings account was 1% per year, and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?
- A) More than today
- B) Exactly the same
- C) Less than today

MEASURING FINANCIAL KNOWLEDGE

- Objective
- **Question 3**
- If interest rates rise, what will typically happen to bond prices?
- A) They will rise
- B) They will fall
- C) They will stay the same
- D) There is no relationship between bond prices and interest rates

MEASURING FINANCIAL KNOWLEDGE

- Objective
- **Question 4**
- A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.
- A) True
- B) False
- C) Don't know

MEASURING FINANCIAL KNOWLEDGE

- Objective
- **Question 5**
- Buying a single company's stock usually provides a safer return than a stock mutual fund.
- A) True
- B) False
- C) Don't know

MEASURING FINANCIAL KNOWLEDGE

- **Subjective** Knowledge:
- Single-item measure
- ‘‘On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge?’’

Very Low	Low	Somewhat Low	Neutral	Somewhat High	High	Very High
1	2	3	4	5	6	7

COMBINING THESE CONCEPTS

- Based on earlier work by Allgood and Walstad (2013)
- 4 mutually exclusive knowledge categories combining subjective and objective components
  - High Objective, High Subjective (HO-HS)
  - High Objective, Low Subjective (HO-LS)
  - Low Objective, High Subjective (LO-HS)
  - Low Objective, Low Subjective (LO-LS)

Classifications of "high" or "low" were based on sample median values

BORROWING BEHAVIOR

- Focus on High-Interest Loans (Alternative Financial Services in the United States) which include:
- 1) payday Loans
- 2) Rent-to-Own Financing
- 3) Title Loans
- 4) Tax-Refund Anticipation Loans
- 5) Pawn Shops

CONTROLLING FOR OBJECTIVE NEED

- Possession of an emergency fund
- Lack of any income shock in prior 12 months
- Homeownership
- Health Insurance
- Checking or saving account ownership
- No difficulty paying bills
- Credit score > 720
- No medical or student loan debt

EMPIRICAL MODEL FOR ANALYSIS

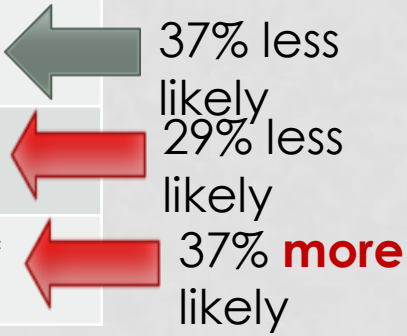
- 5 Separate Logistic Regression Analyses: ("yes" if individuals report utilization of each separate service in the five years prior to the survey, "no" otherwise)
- Separate Analyses run for each Objective Need Control (noted previously)
- Other relevant controls: age, gender, ethnicity, education level, marital status, number of children, labor force participation, income, insurance ownership, banking status, emergency fund, difficulty with bill management, income shock, and risk attitude

RESULTS

- Objective Knowledge consistently associated with decreased likelihood of AFS use (ranging between 12-20% less likely per unit increase)
- Subjective Knowledge was significantly associated with increased likelihood of AFS use for auto-title loans, tax-refund anticipation loans, and rent-to-own transactions (NS otherwise)

RESULTS CONTINUED

Respondent has taken a payday loan in the past 5 years	
Knowledge Measure (Ref: LO-LS)	
HO-HS	.627***
HO-LS	.714***
LO-HS	1.371***



This pattern is identical for each of the other AFS behaviors analyzed

CONTROLLING FOR OBJECTIVE NEED (MAYBE?)

Table 6. Odds ratios from logistic regressions for objective-subjective knowledge indicators

Dependent variable:	(1) =1 if respondent has taken an auto title loan in the past 5 years; =0 otherwise	(2) =1 if respondent has taken a "payday" loan in the past 5 years; =0 otherwise	(3) =1 if respondent has taken a tax refund anticipation check in the past 5 years; =0 otherwise	(4) =1 if respondent has used a used a pawn shop in the past 5 years; =0 otherwise	(5) =1 if respondent has used a rent-to-own store in the past 5 years; =0 otherwise
Reference category for coefficient estimates below is low objective, low subjective financial knowledge. Sample limited to individuals who…					
have emergency funds					
High objective, high subjective	.556 ***	.476 ***	.502 ***	.564 ***	.450 ***
High objective, low subjective	.580 ***	.510 ***	.374 ***	.593 ***	.353 ***
Low objective, high subjective	1.700 ***	2.125 ***	1.990 ***	1.556 ***	1.811 ***
have not experienced an income shock					
High objective, high subjective	.692 ***	.582 ***	.599 ***	.624 ***	.577 ***
High objective, low subjective	.834 **	.658 ***	.537 ***	.700 ***	.617 ***
Low objective, high subjective	1.388 ***	1.169 *	1.344 ***	1.159 *	1.381 ***
own a home					
High objective, high subjective	.685 ***	.526 ***	.457 ***	.588 ***	.462 ***
High objective, low subjective	.769 ***	.662 ***	.443 ***	.666 ***	.503 ***
Low objective, high subjective	1.759 ***	1.627 ***	1.599 ***	1.482 ***	1.725 ***

Now 112% more likely (was 37%)

IMPLICATIONS AND MARKET CONSIDERATIONS

- Alignment of Objective and Subjective Knowledge
- Limitations of knowledge
- Market Instruments

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Financial Consumption - Hidden Key Indicators

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The industrial economy is geared towards **maximization of wealth**. This target has led towards a substantial, even amazing, economic growth during the last two centuries. Yet, at the same time this growth has introduced new risks and has caused severe threats and actual damages to the environment and to the social framework. Research shows that mankind survival on Planet Earth is becoming the most pressing and urgent challenge of our time [4],[12].

Some risks are environmental: Global climate changes, loss of diversity that decreases resilience, damages to delicate food chains, and land, air & water pollution. Others are societal, like employment security, growing inequality in income and wealth, pressures related to rapid urbanization, and demographic changes that threaten retirement system.

The focus of our conversation will be to show the roles of financial consumers in helping the mitigation of these threats and turn them into opportunities. As an insurance expert, I think that the retirement savings hold the key to the solution.

Think about the insurance companies – they write the checks when natural disasters resulting from climate changes happen. Therefore, mitigation of those risks is a **must** for the insurers. The retirement and insurance funds are responsible for huge amounts of money globally. They manage the largest asset most individuals accumulate during their lifetime. These monies are the major source of long term investments in the world. Managing these monies involves a great responsibility: When we save for retirement,

the money is invested in projects that reshape our future, and at the same time are supposed to create the revenue stream needed to finance our retirement.

It is important to remember that the insurers and pension funds are just managing **our** money, and therefore they have to serve **our** values. Since environmental and societal risks endanger our survival, we better encourage the insurers to use the funds directly to mitigate some of the major threats, such as the climate change and the insecure employment and retirement arrangements. What is the sense in making other conventional investments, given the level of threat of climate change on our future?

We have the needed funds

Does the insurance and pension industry have sufficient funds that can be the source needed to save humanity? Yes it does! The industry manages a portfolio in the magnitude of $80 T (Larger that the annual global GDP). And every year some $7-10T have to be reinvested [7]. These enormous amounts are more than enough to migrate the threats we are heading.

Let us focus on the example of climate change alone: The Stern Report on the impact of climate changes, published in 2005 [8] estimated that an annual investment of 2% of global GDP was needed to prevent the consequences of climate changes. At that time this was equivalent to "only" $1.5T. This huge amount is only a part of what insurers have to invest annually. Similar projects serving other environmental, social and ethical goals can be treated in a similar way. So the only question is: how can we assure that those funds will be invested on behalf of our future rather than in projects that will eventually destroy us?

At present the investments of pension and retirement funds are managed towards the goal of the current paradigm, thereby serving mainly (almost merely) economic goals. In other words – maximization of the return on investment. Most of the investments are currently made in traded (short term) financial instruments that have daily market valuation rather than in long term real assets. Moreover, some of the financial instruments create much volatility and crises in our financial systems.

A paradigm shift toward 4D system

We have to replace the mere (short-term) economic objective by a multi-dimensional target. There is a broad agreement that we have to serve the "triple bottom" concept that considers at least three dimensions: **E**conomical- **S**ocial- **E**nvironmental [triple bottom source].

The recent introduction of very sophisticated communication and computer systems, such as the smartphones, has made a tremendous change in the world. It enables each person to get access to the entire available knowledge. And at the same time enables people to connect. This has transferred much power from the hands of governments and big businesses to the hands of individuals, and created the Era of the Global Person [13]. We, therefore, suggest to add a fourth dimension to the new dashboard: our new addition to the system, would be Consumer (& Citizen) Consciousness. So we recommend using a 4D system, **ESEC** = **E**conomical- **S**ocial- **E**nvironmental - **C**onsumer (& Citizen) Consciousness, rather than just the triple bottom line approach. Moving from a system where we serve the economy, to a system that serves our 4D ESEC dashboard will generate a game change, will create a transformation, a paradigm shift!

As you know, Peter Drucker introduced the concept that you don't measure what you get, you rather get what you measure [2]. In other words, the metrics set the goal. The new dashboard will serve as our compass and all governments, businesses, organizations and individuals will be aligned in reaching the complex goal. This new goal will enable us to serve all the diverse values alongside the old economic objective. We shall see that serving environmental and societal values doesn't contradict economic targets.

This will lead towards an enhanced and expanded form of capitalism. Capitalism assumes that each player strives for wealth maximization. This leads to creation of supply and demand curves that automatically determine a set of equilibrium prices. This process leads towards an automatic allocation of all resources as well as all goods and services that we produce. The beauty of the capitalistic system is that the allocation is not only automatic ("the invisible hand"), but also **optimal**. Changing the definition of wealth and inclusion of additional forms of capital – economic capital, social capital, human capital, natural capital, etc. – will lead to a new optimum. (This will enables us to explain and manage what seems to be a huge problem of our antiquated accounting system that explains only a small part of the "market value" of firms) [1]. Moreover, it

will show that the new accounting regulations, mainly the capital adequacy rules of **Solvency 2** are diverting funds towards the wrong directions (since they generate a bias towards short term traded government securities, and against non-governmental and non-traded loans and investments). The main issue, of course, is the definition of the new metrics.

For example, the investments of the retirement funds would include anti climate change projects such as renewable energies plants, energy storage systems, better transportation systems, greenhouse gases emission, etc. It may include new educational systems for engineers, designers, executives, accountants. It may encourage new production technologies like Cradle to Cradle [6] and may have impact on job markets. It may possibly even change the retirement system by guarantying minimum returns on retirement funds and relieving the savers from some of the dependency on the volatile capital markets.

How can we make it happen?

As a professor I am a dreamer, but I am also very practical. When the Stern report was published I discussed with some of my friends, leaders of the international insurance industry, the challenge of climate change and the needs for channeling investments towards new directions. The industry leaders decided to create a committee to deal with the issue. They were aided by the Financial Initiative of the UN environmental protection agency (UNEPFI). It took several years to work out a draft of a voluntary PSI treaty – Principles for Sustainable Insurance [9],[10]. This followed the PRI convention that took place for the financial sector sometime earlier [11]. In June 2012 the UN RIO+20 summit on environment and climate change convened in Rio de Janeiro. Not coincidently, at the same week the signatory process of the PSI treaty took place at the Global Insurance Conference at another part of Rio. (I was honored to be a speaker at this event).

Today –about 50% of the funds – approximately $40 T - are already almost in “our hands”. WHY only 50%? Mainly because the inability of US insurers to participate due to legal issues. The main difficulty is regulation. For example, corporation laws in most states say that corporations are supposed to maximize shareholders profit, and executives are afraid to be sued if they will invest in environmental projects.

We have to encourage and thank the insurers that have committed themselves to manage their business in a sustainable way for the benefit of the future of humanity. We can use our power as conscious consumers to show our appreciation.

Metrics

The insurers and UNEPFI committee is still working on the by–laws for the PSI treaty. The main difficulty is the lack of agreeable metrics!

Our Purpose is to help develop the new metrics for the 4D ESEC dashboard. It will enable to optimize the allocation of these long term investments. We can achieve that, if we all unite – the UN, Insurance companies, Retirement funds, Sustainable brands, Game changers500, YKCenter and other organizations that recognize sustainability as their major goal. It is possible, and closer than ever before.

Do you realize the enormous meaning of harnessing the large monies towards the 4D system? The potential impact of this? The wonderful thing is that the money exists. We simply have to make sure that it is invested in the right place. By that, we will be able to ensure the shaping and reshaping of our common future.

To make this happen - we will have to make a paradigm shift, and go through a transformation, and become game changers. This will enable us to prosper in a 4-D sense, rather than just economically.

I believe this will make the insurers, eventually, more important than the banks. This will happen also as a result of the developments of computers and communication, and the development of complementary currencies [5]. the marginal costs of handling large data, transferring and exchanging money and banking services is becoming negligible. The only remaining true cost is the cost of credit rating and insuring credit risks. This may encourage insurers to work with consumers and make the shift faster.

We have two main challenges:

First, we need to harness the US insurance companies to join - they are currently not part of this move, as we mentioned. But where there's a will - there's a way - together

we can find it.

Second, we still have to work out a more sophisticated multi-dimensional metrics system, the 4-D matrices. The UN secretary general recently declared their aim to have a new dashboard by March 2016. We need to make sure, that it will include metrics to guarantee optimal management of funds for the benefit of humanity. We need help in shaping the future dashboard. Join our teams working worldwide in designing what we believe to be the most important dashboard in human history.
And please pass our message forward - if what you have heard here today touched you - please make sure more people hear about it, and join this common effort.

Is it possible? YES WE CAN! (Note the internationality of this sentence – "yes" in three languages: English, French and Hebrew…).

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INDIAN FINANCIAL MARKETS IN A GLOBAL ECONOMY

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Financial Sector in India

- The Indian Financial Sector comprises of
  - Banks
  - Non Banking Financial Services
  - Equity Markets
  - Commodity Markets
  - Insurance Services
  - Pension Services

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Financial Regulators in India

- Reserve Bank of India (RBI) – Banks, NBFCs
- Securities Exchange Board of India (SEBI) – Equity markets and Commodity Markets
- Insurance Regulatory Development Authority (IRDA) – Insurance Sector
- Pension Fund Regulatory Development Authority (PFRDA) – Pension Sector

Financial Literacy in India

- Interesting divide
  - Urban India generally highly financially literate
  - Issues of financial literacy in rural India
- Matter of priority for the government and the regulators
  - Active efforts are being made to significantly enhance the financial literacy levels across al segments of the population
  - Increased access to financial services, particularly in rural India, is being targeted to enhance financial literacy

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Banking Sector in India

- Comprises of
  - Public Sector Banks
  - Private Sector Banks including foreign banks
  - Cooperative Banks
- Strongly regulated by the RBI
  - Stringent norms in terms of kinds of products that the banks are allowed to trade in
    - Most products including derivative products, allowed though some legal issues remain
- Is viewed as a proxy to the social security in the country
- Fully compliant with global standards like Basle norms – in fact norms are stricter than the Basle Committee prescribed ones
- At time, can be viewed as quite bureaucratic and hence slow moving

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Non Banking Financial Services

- Add to the breadth of the Indian Financial Sector
- Operate in a number of specialized domains as well as in cross functional domains
- Comprises of both very large players as well as absolutely small and unorganized players
- Broad regulatory responsibility vests with the RBI though for certain types of players, SEBI also has regulatory powers
- Generally less bureaucratic as compared to the banking sector and hence very popular

Equity Sector

- Three main stock exchanges
  - Bombay Stock Exchange (BSE)
  - National Stock Exchange of India (NSE)
  - MCX - SX

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Features of the Equity Markets

- Proactive regulatory oversight by SEBI
- All exchanges are completely demutualized
- Completely electronic trading
  - NSE was started as the world's first completely electronic exchange in 1994
- All securities held in electronic form (dematerialized form)
- Excellent and very robust risk management practices
  - Ability to identify trades down to the IP of the terminal from which the trade was initiated in a matter of minutes
  - Very efficient margining system ensuring no instance of default even in very adverse market conditions
- Active derivative markets – both on the index as well as on individual securities

Commodity Markets in India

- Existed for a long time
- Derivatives trade on commodities banned by the Government from 1951 till 2000 – reintroduced in 2001
- Derivatives trade is only on futures contract – options contract not yet allowed
- Unlike equity markets, evidence of malpractice in the market existed till recently – prompted the government to bring it under the purview of SEBI and its market monitoring and control mechanisms
- Active contracts are both on agri commodities as well as non agri commodities

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Insurance Sector

- Around since 1930's
- Controlled by the Government till 1999
- Since 1999, sector liberalized to allow entry of private players
  - Foreign players allowed only through a joint venture with the majority stake being with the Indian partner
- Both Life and Non Life insurers as well reinsurers present in the market – Currently there is
  - One government controlled life insurer and about 20 private life insurers
  - Four government controlled non life insurer and about 20 private non life insurers
  - One government controlled reinsurer and about 4 private reinsurers
- Unlike most other markets, about 85% of the market (in terms of premium collected) is from the life insurance segment
- Strong regulations in terms of capital adequacy norms and investment opportunities by the insurers
- Interesting, the regulator, IRDA not only regulates the market but also helps in market development

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Pension Sector

- Applicable primarily to the government pension sector post the movement from DB to DC pensions in the government
- Private pension schemes are typically run by the insurance companies
- The regulator, PFRDA, responsible for the choice of the fund manager for the government pension fund and the kind of investments the fund managers can engage in

Issues with respect to the Global Economy – 1

- Banking Sector
  - Strong regulatory barrier to starting of new banks
  - Bureaucratic approach to operations
  - Types of products allowed
    - Need better clarity on some products, particularly derivative products
  - Broader issue of full convertibility of the currency
  - Strong adherence to AML norms – hence funds flow from some geographies difficult
- Equity Sector
  - Generally most interlinked with the global markets
  - Some issues in terms of sources of investments, particularly from overseas investors in terms declaration of sources of funds – adherence to the AML provisions

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Issues with respect to the Global Economy – 2

- Insurance Sector
  - Ownership issues
  - Capital adequacy issues
  - Product type and related investment issues
- Pension Sector
  - Still a developing sector and hence not a very large one as yet

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Issues with respect to the Global Economy – 3

- Commodity Markets
  - Transparency issues
  - Access issues
  - Potential intervention by the government, particularly in the agri commodity sector
  - Lack of advanced and specialized derivative contracts
- NBFC sector
  - One of the largest segments in the financial sector
  - Some issues of regulation, particularly for the unorganized sector
  - Need increased adherence to regulation, particularly in the light of less bureaucratic approach

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Final Comments …..

- Indian markets reasonably well developed
  - Politically stable environment as well as a reasonably conservative regulatory regime
- Over the last 15 years, have become fairly integrated with the global markets
- Some improvements and clarifications necessary to ensure even smoother integration
- Financial Literacy needs to be strengthened
  - Increased and easy access to financial services to rural India will be a game changer

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Thank You!

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