

STRESS TESTING HOUSEHOLD DATA IN TRINIDAD AND TOBAGO

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PORT OF SPAIN, TRINIDAD



The views expressed are those of the authors and not of the Central Bank of Trinidad and Tobago.

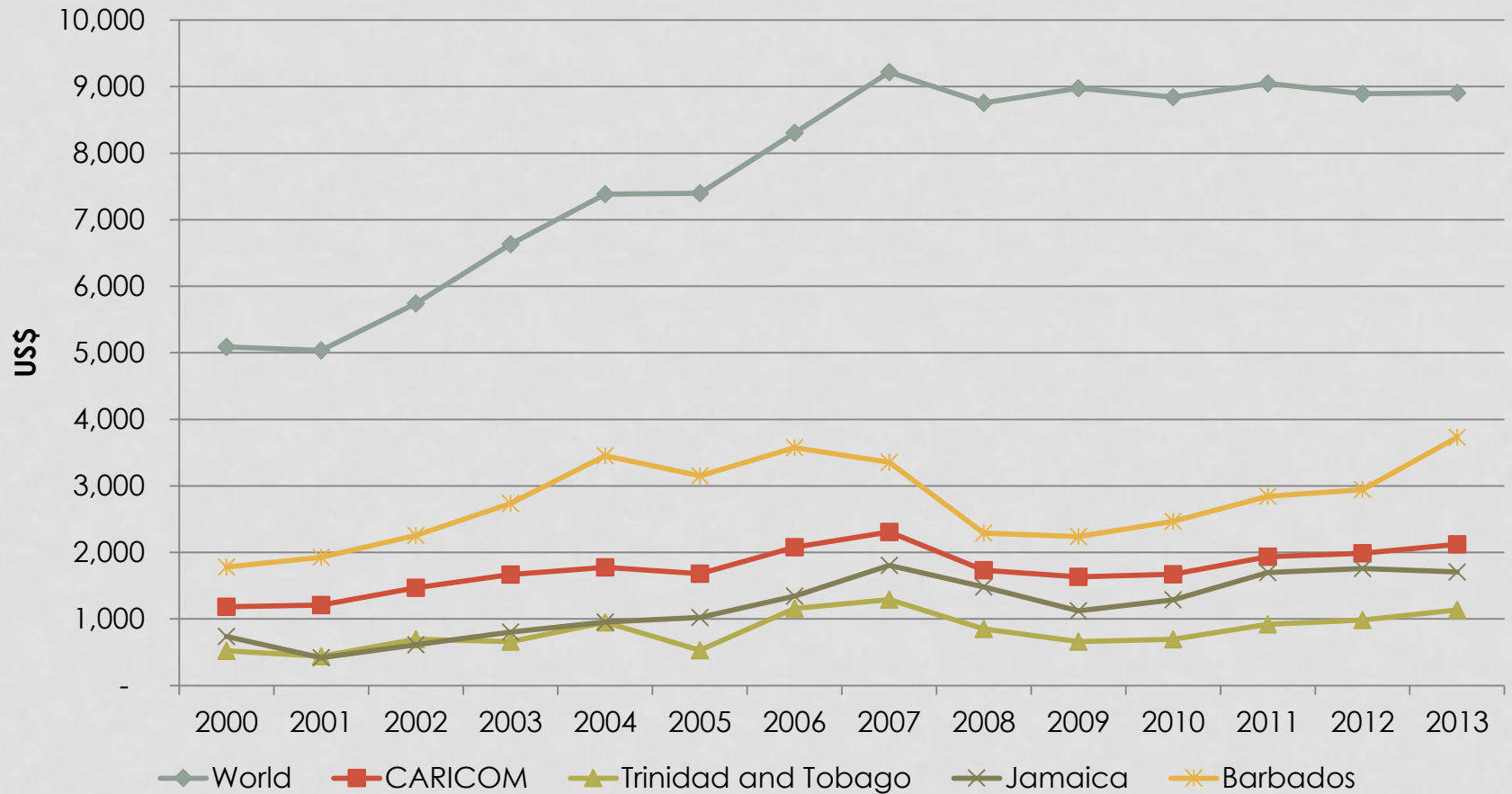
OUTLINE

- Aim
- Review of Data and Literature
- Methodology
- Results
- Limitations

AIM

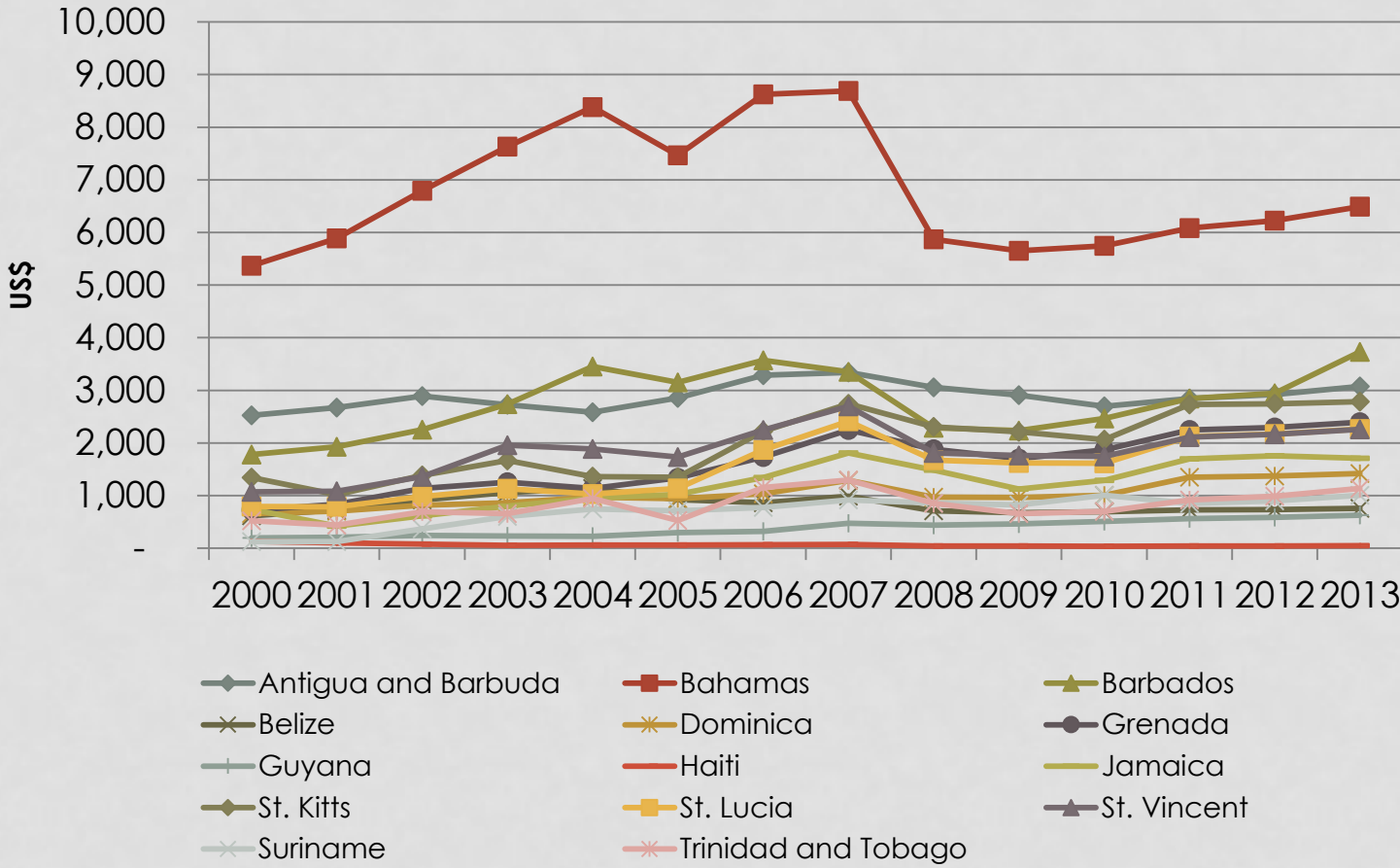
- To assess the potential impact of changes in economic and financial conditions to debt held by individuals in Trinidad and Tobago

HOUSEHOLD DEBT PER ADULT



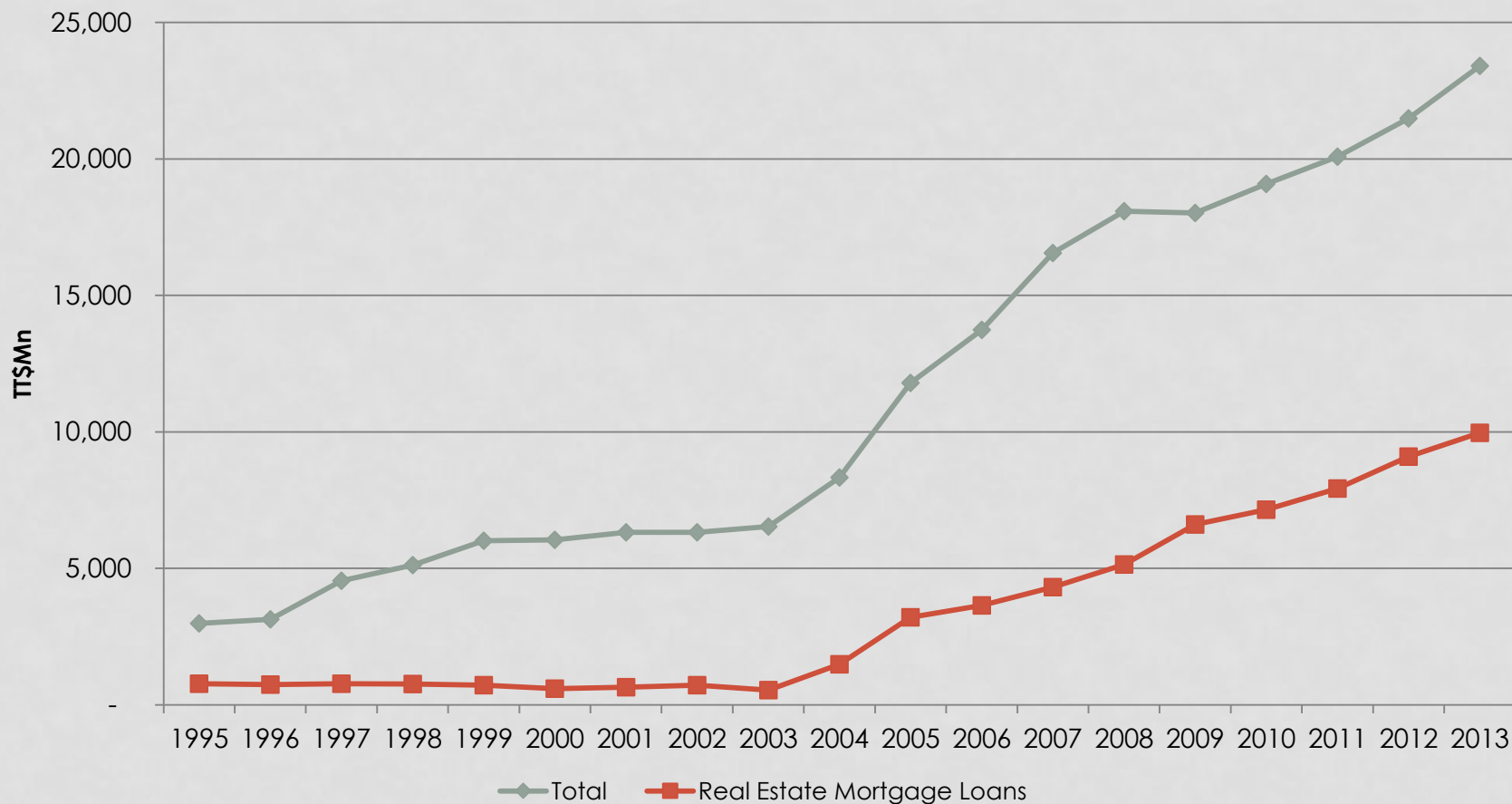
Source: Credit Suisse (2013)

HOUSEHOLD DEBT PER ADULT IN CARICOM



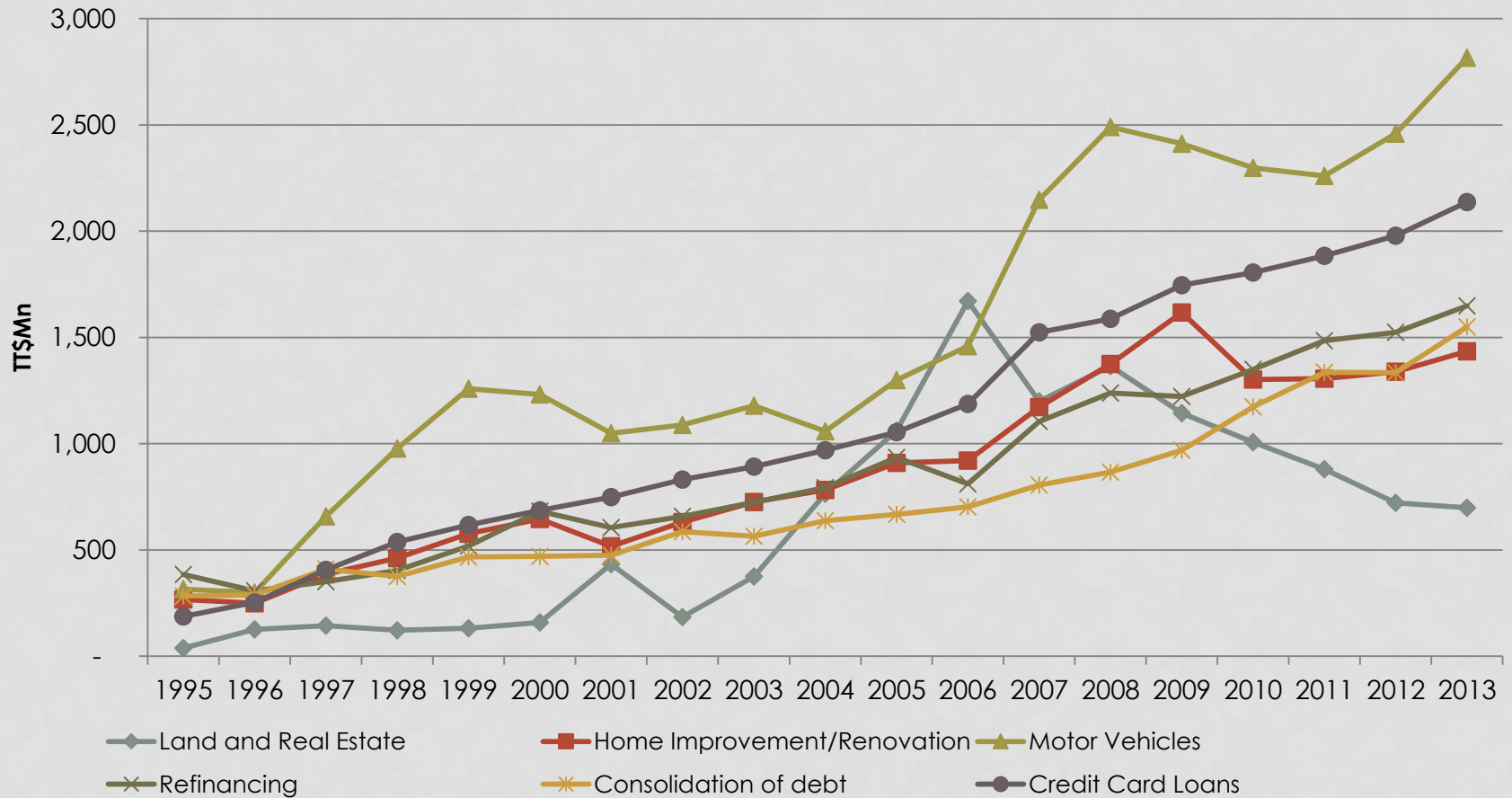
Source: Credit Suisse (2013)

COMMERCIAL BANK CONSUMER LOAN IN TRINIDAD AND TOBAGO - SELECTED ELEMENTS



Source: Central Bank of Trinidad and Tobago

COMMERCIAL BANK CONSUMER LOAN IN TRINIDAD AND TOBAGO- SELECTED ELEMENTS



Source: Central Bank of Trinidad and Tobago

LITERATURE REVIEW

- Johansson and Persson (2006)
- Albacete and Fessler (2010)

LITERATURE REVIEW

- Carter, Moore and Jackman (2012) – Barbados - the average household in Barbados owed about BDS\$ 53,000 in debt in 2010. Positive relationship between household debt and economic growth, inflation, and wages, and a negative relationship with interest and unemployment rates.
- Roopnarine (2007) – Trinidad - estimated that at the end of 2005 the household debt levels had reached \$ 20.6 billion (21.7 per cent of GDP).

METHODOLOGY

- Calculation of Financial Margin (FM)
 - $FM = NI - EE - INST$
 - where NI is income, EE essential expenditure and INST debt
- Probability of Default (pd)
 - $pd = 1$ if $FM < 0$
 - $pd = 0$ if $FM \geq 0$

METHODOLOGY

- Debt Exposure

- $EAD = \frac{\sum pd D}{\sum D} * 100$

- D is the debt of the household/individual.

DATA - AVERAGE CHARACTERISTICS OF INDIVIDUALS

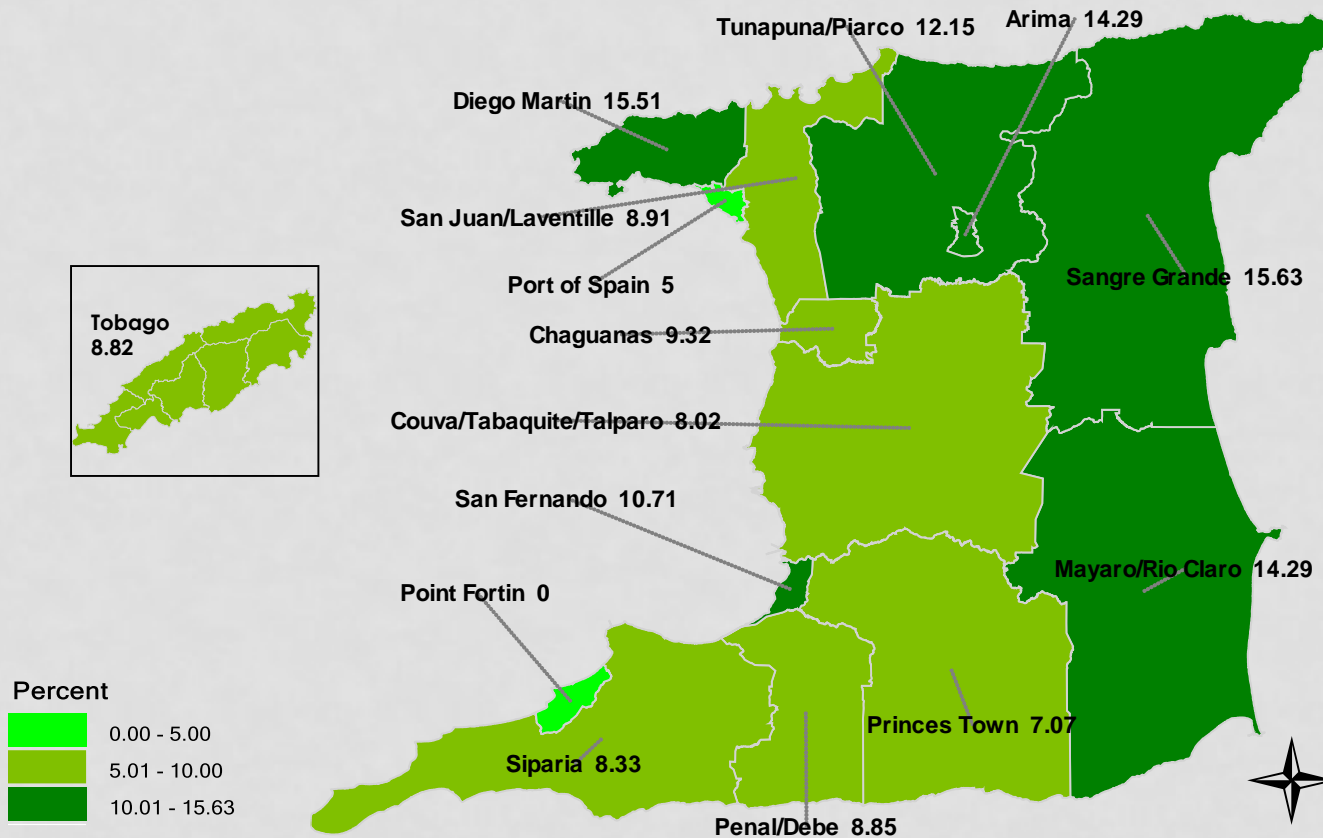
Indicators	With Debt	Without Debt
Income	TT\$ 7,222.40 per month	TT\$ 1,885.97 per month
Essential Expenditure	TTS 982.60 per month	TTS 448.76 per month
Instalments	TTS 1,234.13 per month	0
With Mortgage	20.0%	0
Age of Individual	43.34	32.97
Size of Household	3.90	4.37
No. of Individuals	2,180	21,596

Source: Household Budgetary Survey 2008/2009

BASELINE SCENARIO

- 10.18 % of individuals are vulnerable
- 13.9 % of debt exposed
- $p(FM) = \alpha_0 + \alpha_1 \textit{gender} + \alpha_2 \textit{age} + \alpha_3 \textit{marital status} + \alpha_4 \textit{education} + \alpha_5 \textit{job}$
 - Persons with the characteristics of having only pre-school level of education, and being female have a higher probability of a negative margin

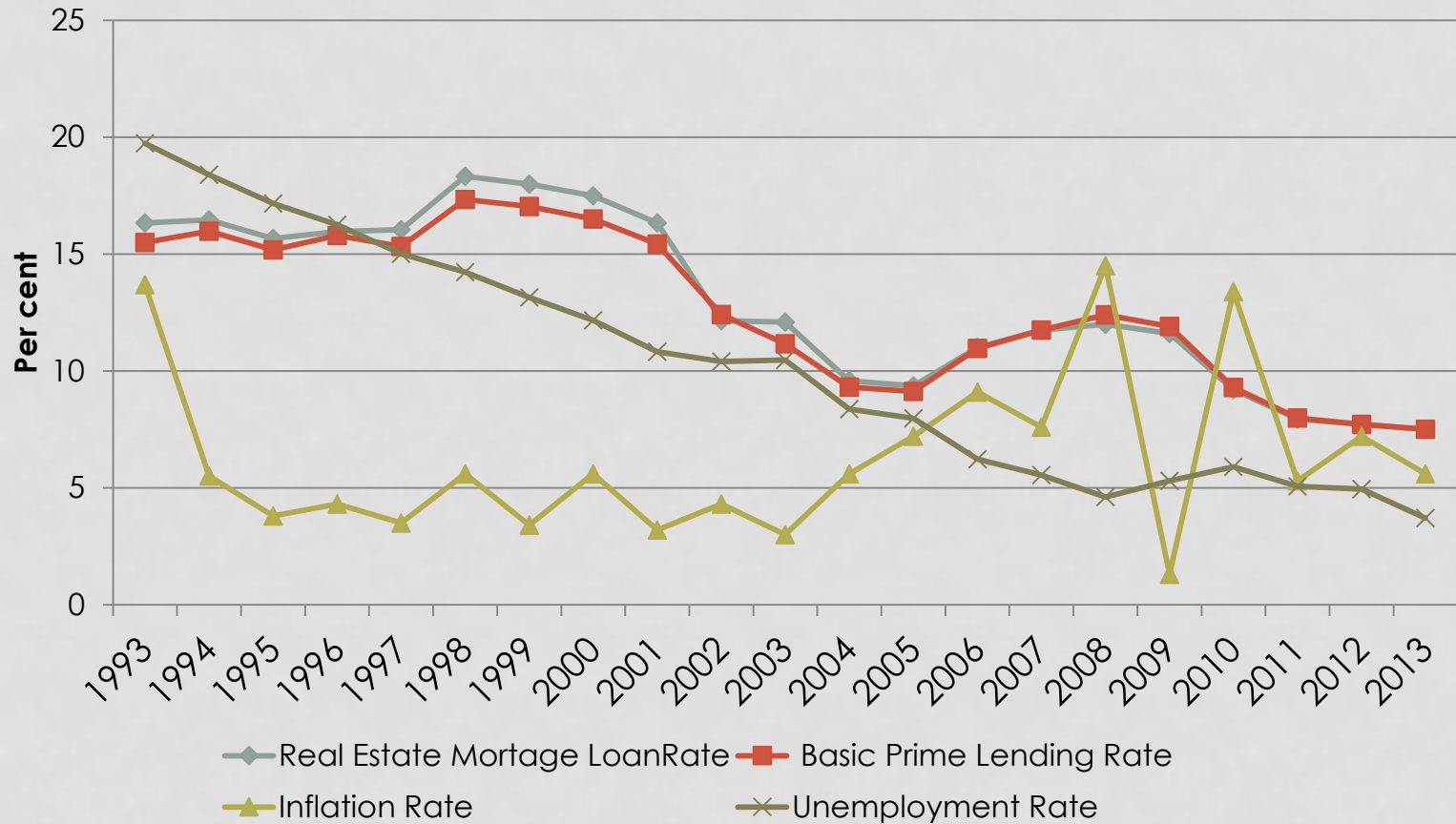
AREAS OF VULNERABILITY



STRESS TESTS

- Inflation
- Interest Rates
- Unemployment:
 - $Prob(u_i) = \Phi(\alpha + \beta x_i)$

RATES



Source: Central Bank of Trinidad and Tobago

RESULTS - VULNERABLE PER CENT OF POPULATION

	Inflation Rate	Interest Rate	Unemployment Rate
1% increase	10.28	10.28	16.56
5% increase	10.55	10.51	20.32
10% increase	10.64	10.64	24.50

RESULTS – DEBT EXPOSED

	Inflation Rate	Interest Rate	Unemployment Rate
1% increase	14.06	14.06	17.45
5% increase	14.25	14.55	20.41
10% increase	14.41	14.65	23.39

THE IMPACT OF A 1% INCREASE

Income Group	Baseline	Inflation	Interest Rate	Unemployment
Less than \$5,000	24.56 (43.76)	25.38 (47.14)	25.15 (45.36)	33.06 (49.95)
Between \$5,000 and \$10,000	1.39 (8.86)	1.51 (9.26)	1.62 (9.55)	7.64 (13.31)
\$10,000 and over	0 (0)	0 (0)	0 (0)	2.61 (1.05)

MORTGAGE RATES

- Increase in rates did not affect per cent of vulnerable population
- When disaggregated into different income brackets – no impact on \$10,000 or over, minimal impact on the other groups.

MULTI-FACTOR SCENARIO

- Increase inflation by 2%, interest rate by 2% and unemployment by 5%
 - Vulnerable population - 20.64%
 - Debt exposed - 20.74%

IMPLICATIONS OF RESULTS

- Unemployment has the largest impact.
- Those earning over \$10,000 well situated to deal with shocks.
- Mortgages are resilient to shocks.
- A one size fit all loan to value or loan to debt service ratio may not best solution.
- Need to take into account socio-economic characteristics of the population.

LIMITATIONS OF MODEL

- Using 2008/2009 data
- Possible under-reporting of debt and income
- Unable to assess persons assets
- Individual not household level debt

THANK YOU

SUGGESTIONS?