

Family dynamics and household welfare in Cañete, Peru

University of Florida

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Location

South America



Lima



Highway

Cañete River

San Vicente

Cañete Valley



Peru



Cañete Province



Household and Farm



Data source

- SURVEY (1998), Cabrera (1999)

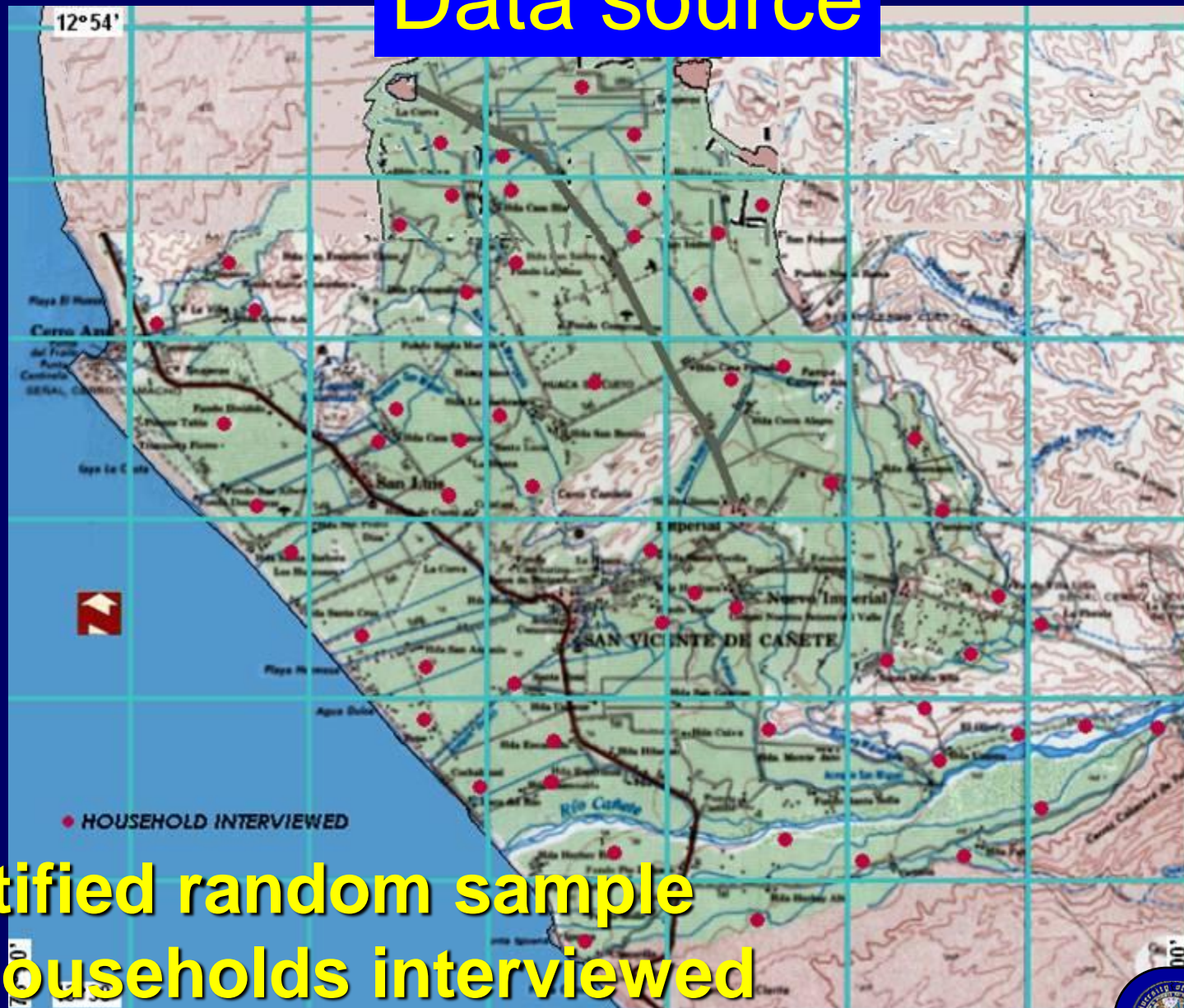
<http://etd.fcla.edu/etd/uf/1999/amj9816/cabrera.pdf>

- Valle Grande Rural Institute, NGO

<http://www.irvg.org>

- Five years in the area

Data source



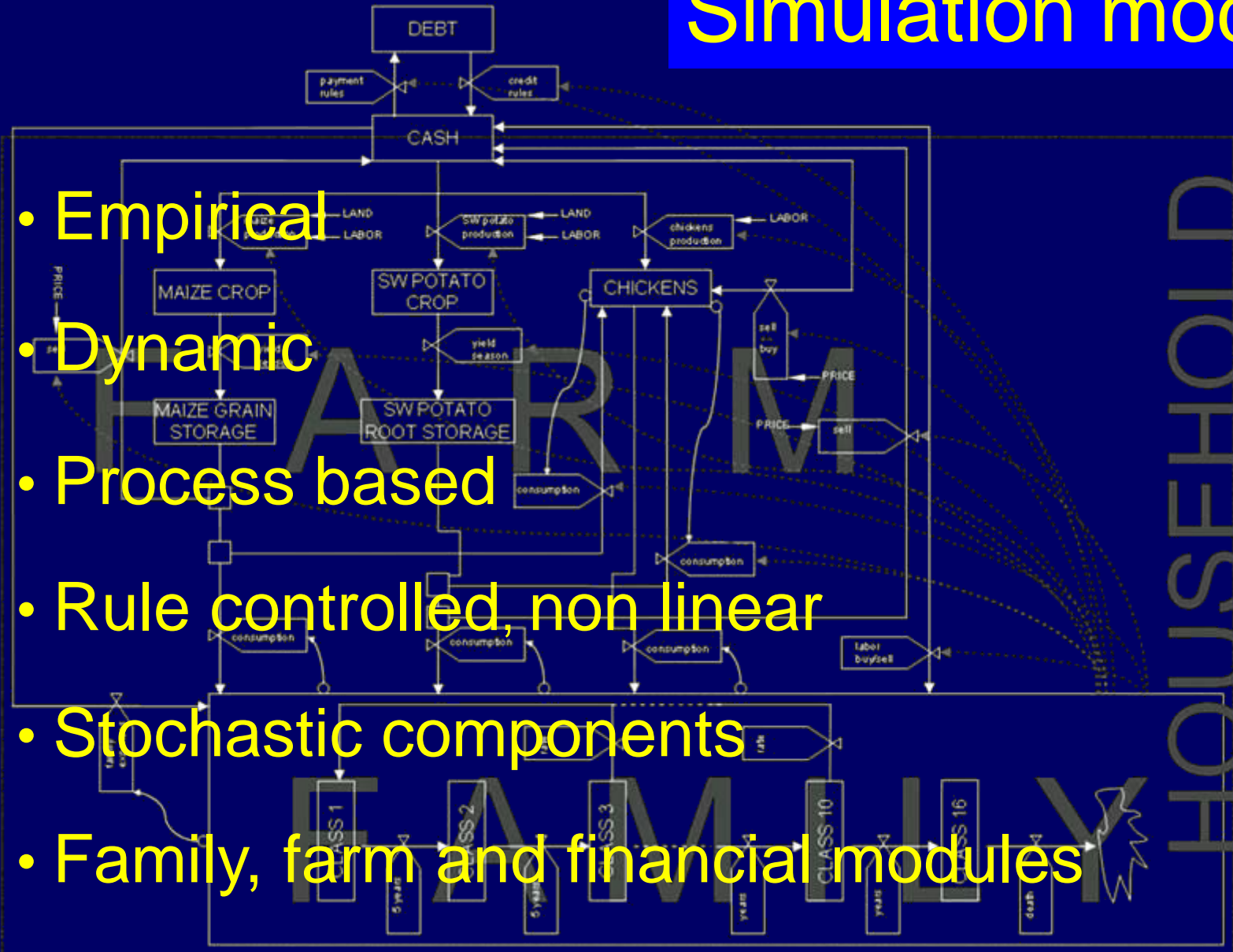
**Stratified random sample
60 Households interviewed**

Objectives

- Analyze financial results for different household compositions over time
- Welfare of different household compositions and overall community impact

Simulation model

- Empirical
- Dynamic
- Process based
- Rule controlled, non linear
- Stochastic components
- Family, farm and financial modules



Initial conditions

STATE VARIABLE	VALUE	UNITS
CASH	1,000.00	\$
DEBT	1,000.00	\$
MAIZE	0.00	Kg
SWEET POTATO	0.00	Kg
MAIZE STORAGE	500.00	Kg
SW POT STORAGE	800.00	Kg
CHICKENS	14	Units
FAMILY	5	Members

Family is composed of father (31), mother (26), grandmother (61), and two infants (2 and 1). There are newborns in subsequent years (2, 3, and 5).

Initial conditions

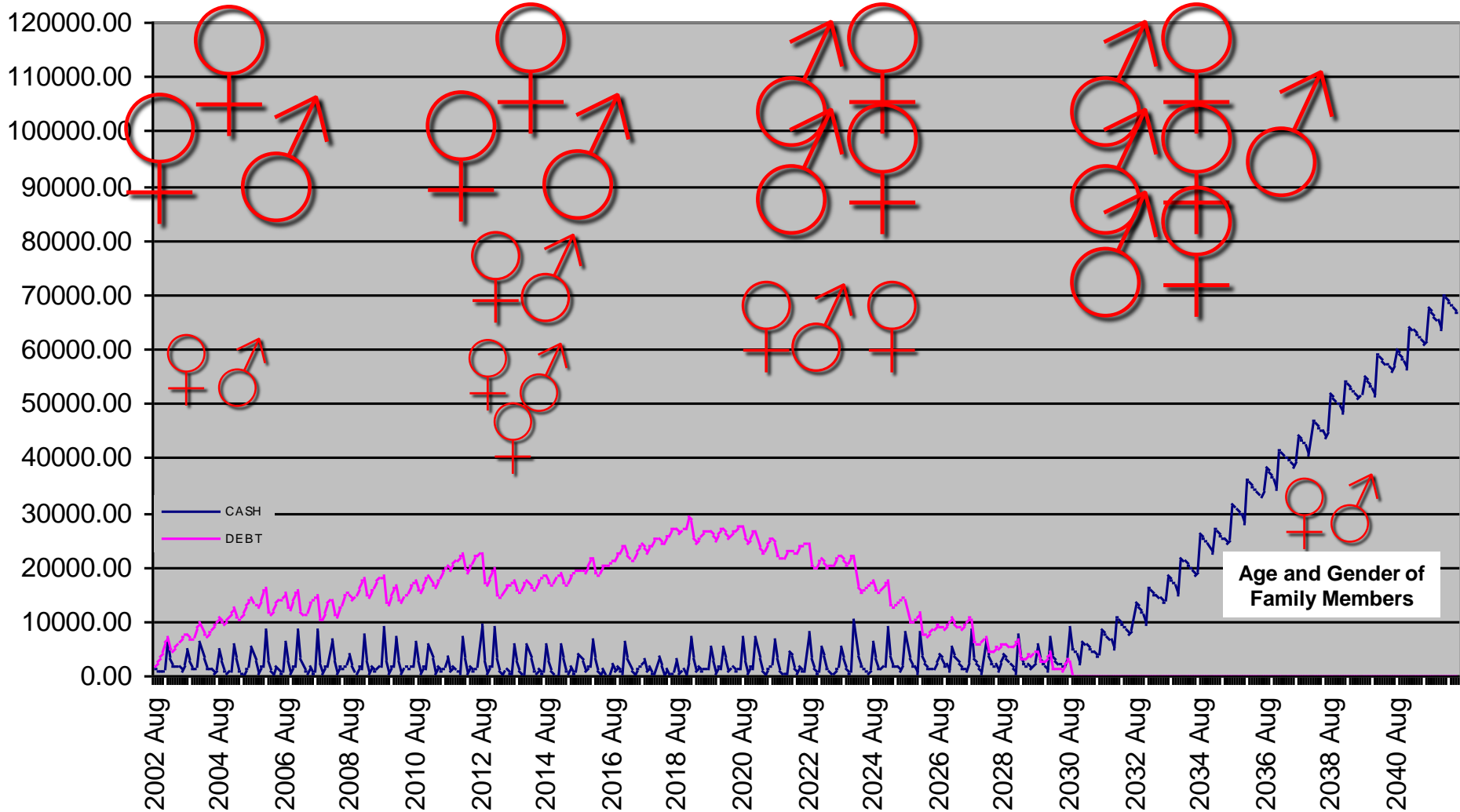
Random distributed variables: Chickens death, Chickens price, Maize & Sweet Potato Yield, Maize & Sweet Potato prices.

Time steps: Farm module runs in monthly steps. Family module runs in yearly steps.

Run starts: August 2002

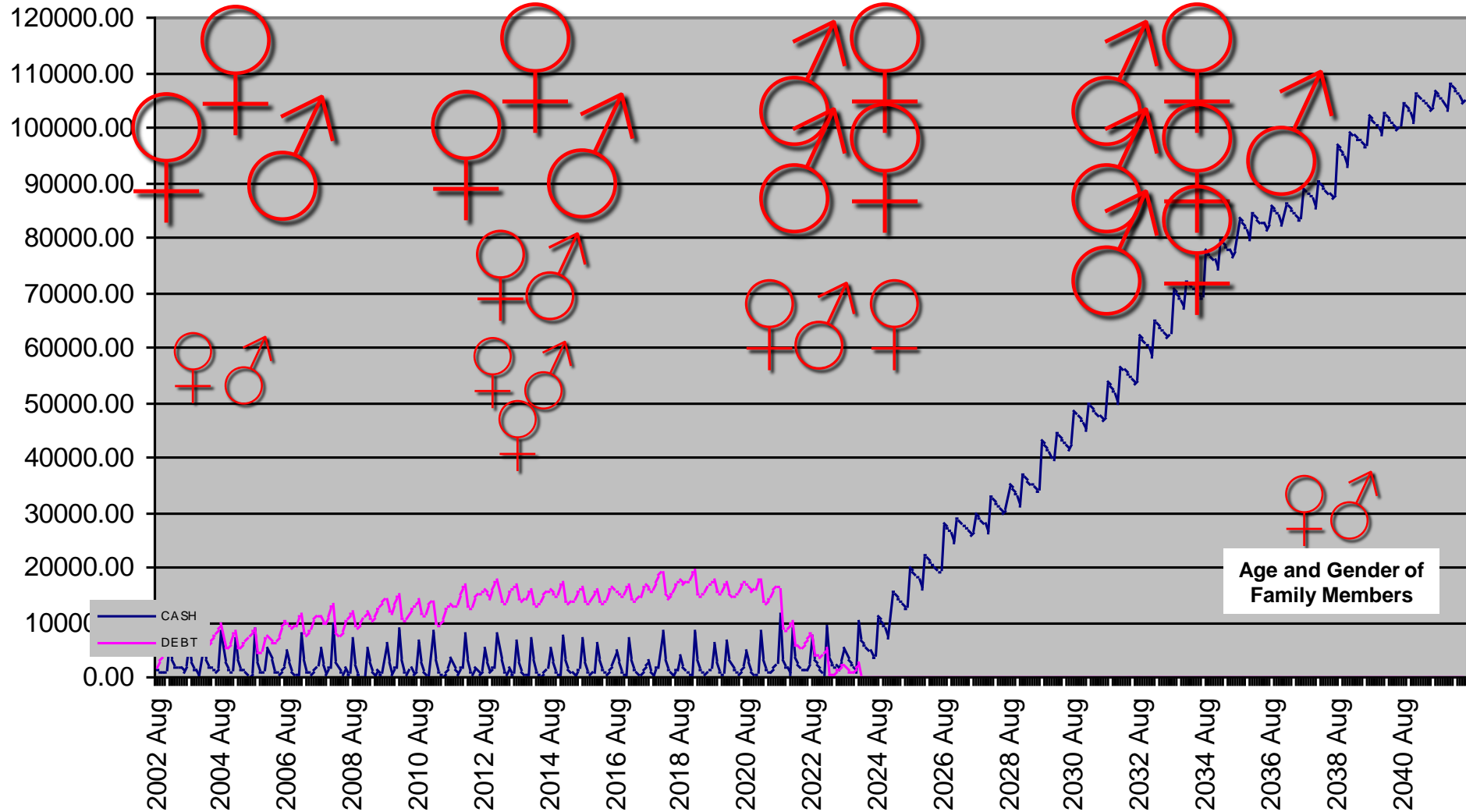
**Software: Microsoft Visual Basic ®
Embedded in Microsoft Excel ®**

Simulated cash, debt and family

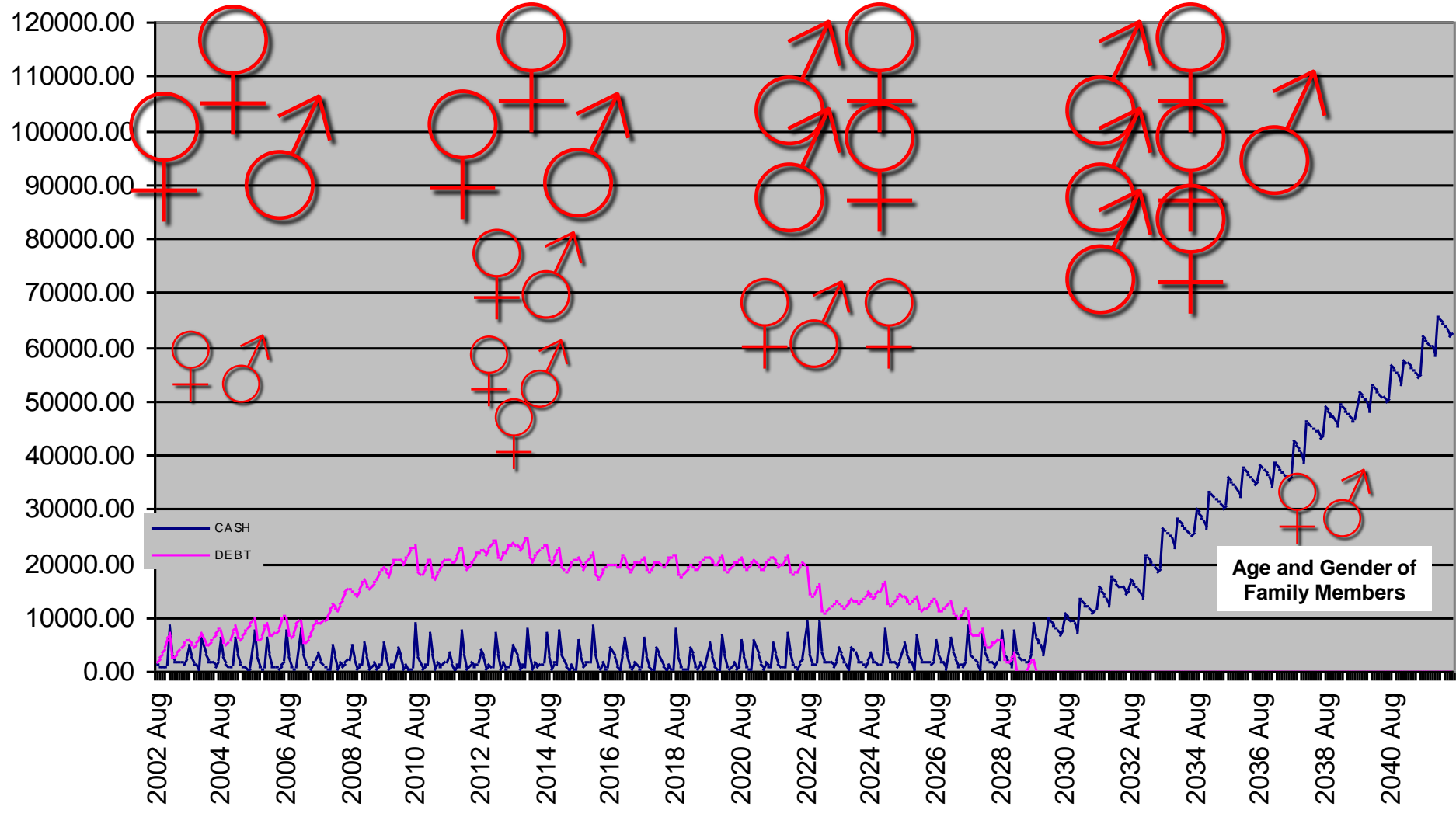


Age and Gender of Family Members

Simulated cash, debt and family

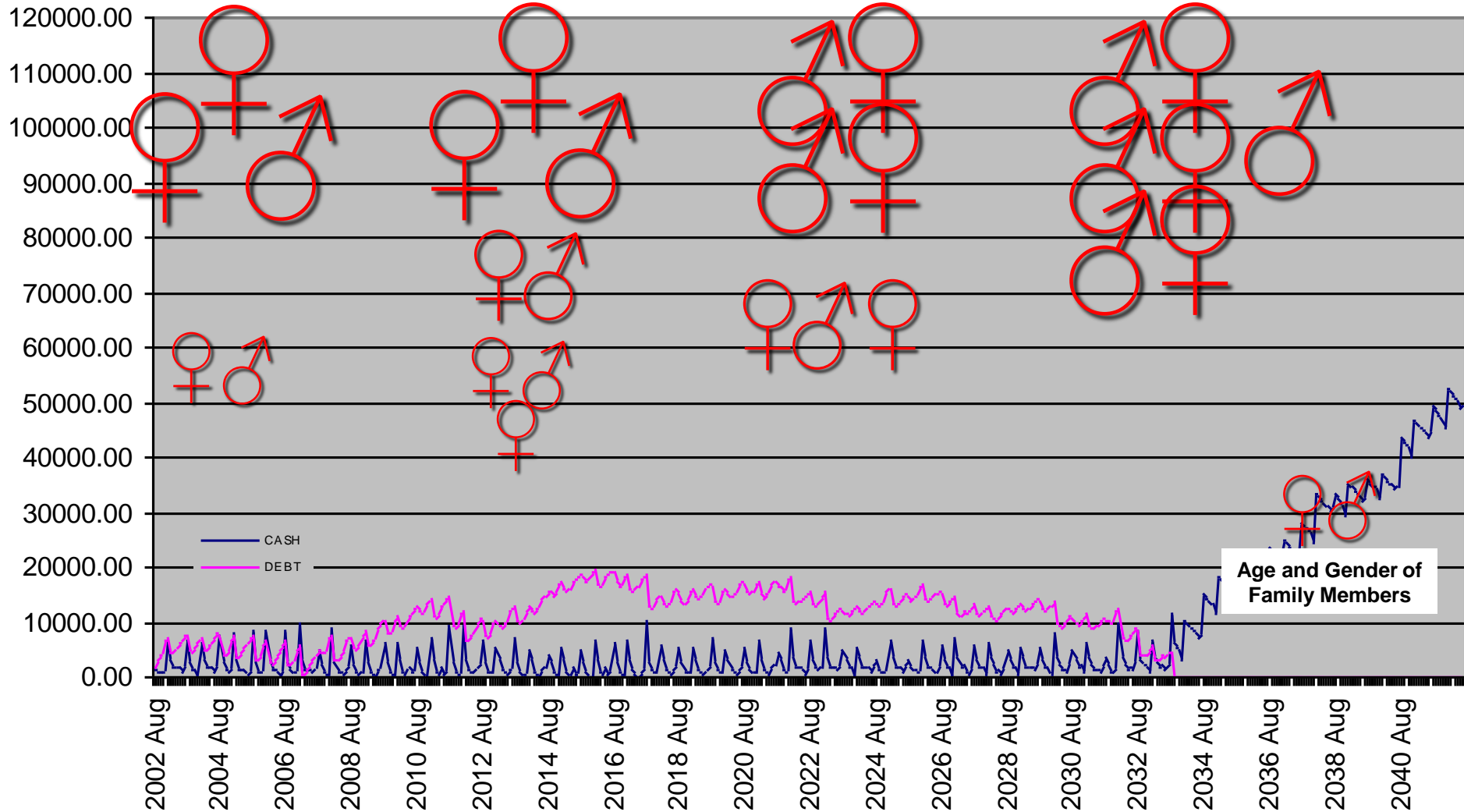


Simulated cash, debt and family

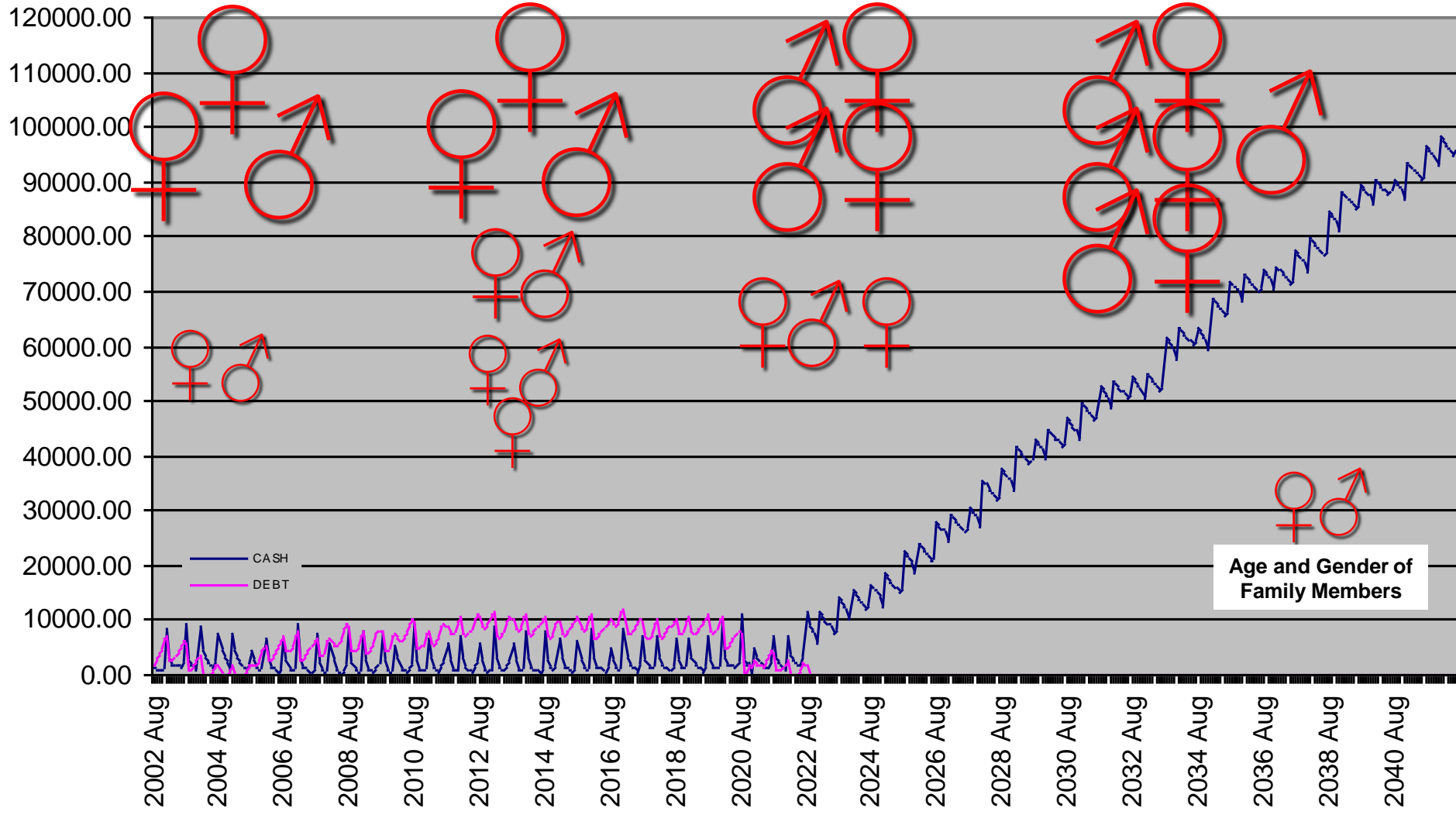


Age and Gender of Family Members

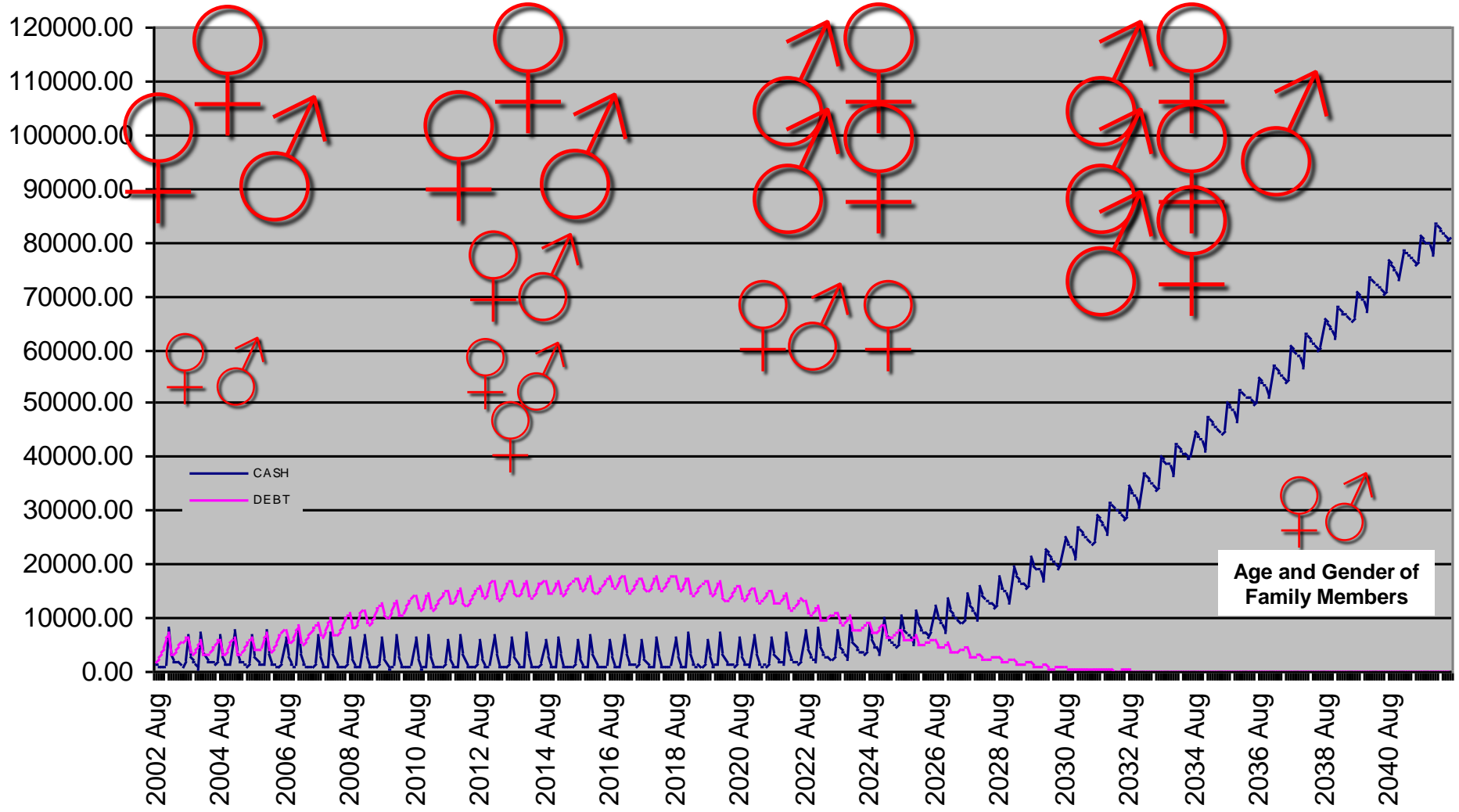
Simulated cash, debt and family



Simulated cash, debt and family



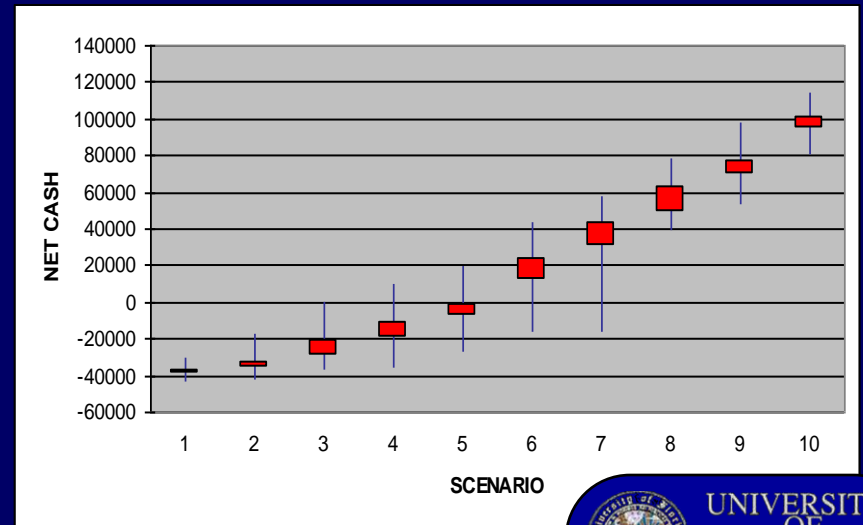
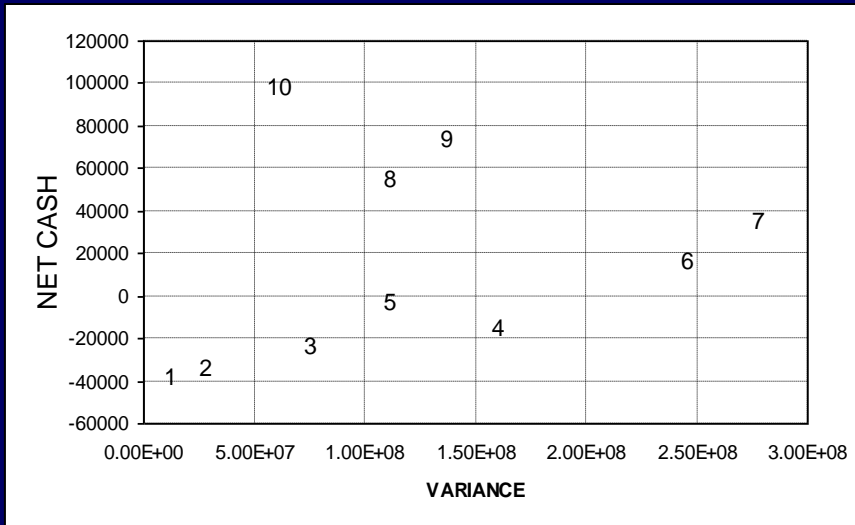
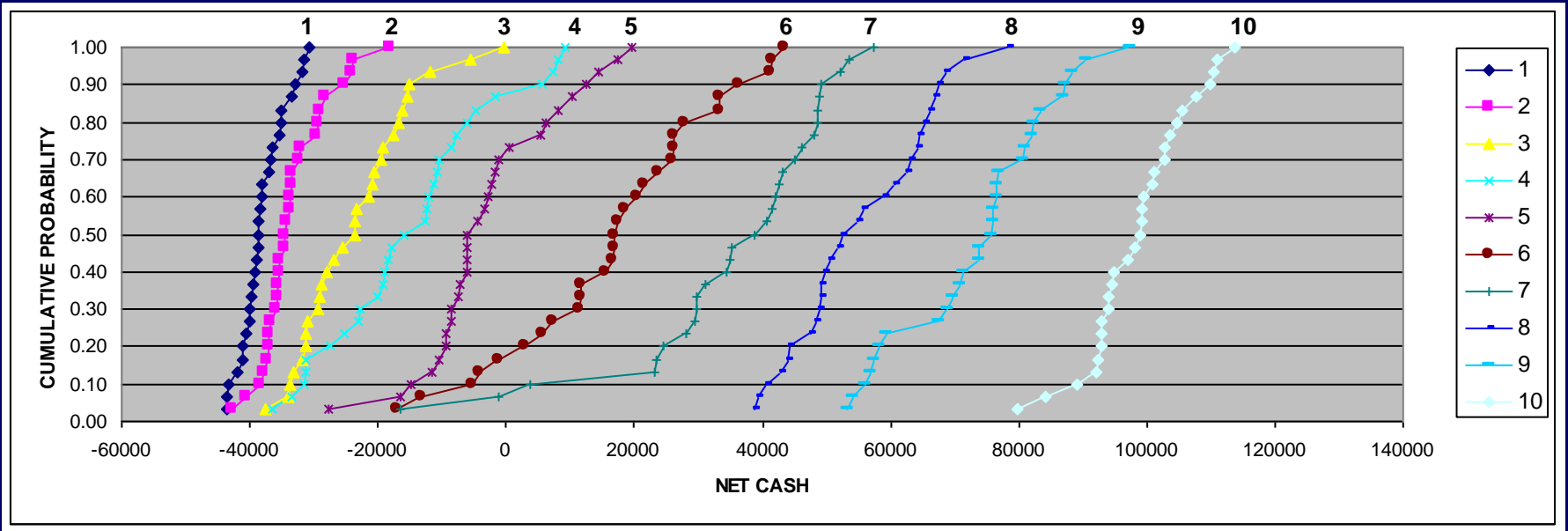
Simulated cash, debt and family



Initial age of family members

MEMBER	TYPES OF HOUSEHOLD COMPOSITION									
	1	2	3	4	5	6	7	8	9	10
1	61	61	61	61	61	61	61	61	61	61
2	31	31	31	31	31	31	31	31	31	31
3	26	26	26	26	26	26	26	26	26	26
4	1	1	1	1	1	1	1	1		
5	2	2	2	2	2	2	2			
6	-2	-2	-2	-2	-2	-2				
7	-3	-3	-3	-3	-3					
8	-5	-5	-5	-5						
9	-7	-7	-7							
10	-9	-9								
11	-11									

20-year financial analysis



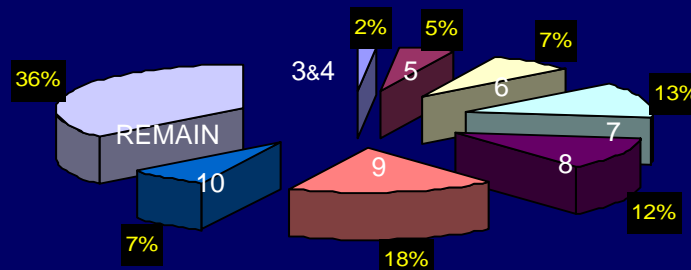
Community impact

"These kinds" of HOUSEHOLDS

MEMBER	1	2	3	4	5	6	7	8	9	10
Number Total of Members	11	10	9	8	7	6	5	4	3	2
Frequency	0	2	4	9	10	5	8	7	11	4
Probability	0.00	0.03	0.07	0.15	0.17	0.08	0.13	0.12	0.18	0.07

"These kinds" of HOUSEHOLDS

	1	2	3	4	5	6	7	8	9	10	Total Population Success	
Probability of success	0.00	0.00	0.01	0.11	0.28	0.93	1.00	1.00	1.00	1.00		
Population Proportion	0.00	0.03	0.07	0.15	0.17	0.08	0.13	0.12	0.18	0.07		
Population Success	0.0000	0.0000	0.0007	0.0165	0.0476	0.0744	0.1300	0.1200	0.1800	0.0700	0.6392	



Conclusions & Recommendations

- **Families with few members were better off after 20 years**
- **Labor in the community is not a limiting factor**
- **Further research should look gender factor**
- **Process based and linear programming simulations might be complemented**

THE END Questions?

