Viability

Donal McKillop
Professor of Financial Services
Queen's University Belfast
Email: dg.mckillop@qub.ac.uk

Outline

- Credit Union Viability/Sustainability
  - The Importance of surplus
  - The Importance of capital adequacy
- Z-Score as a measure
  - Z-Score for Irish Credit Unions
    - Z-Score over time
    - Z-Score and asset size
- Viability – Evidence from US Research studies
- Viability - more than performance metrics?
  - Social Responsibility
  - Economic democracy

Credit Union Viability

- What is meant by Viability - a myriad of views?
- *"To be able to stay in existence on its own without recourse to restructuring. Making a sufficient surplus to ensure the credit unions existence/survival."*
- *"Being able to survive into the future; to be able to cover provisions and all expenses; having adequate reserves; making a surplus each year."*
- *"To be able to function independently into the future; to be in a position to pay a market rate dividend to members; being in a position to charge competitive interest rates; delivery of services that our customers require."*
- ***OR 'where a credit union generates sufficient surplus to both meets its regulatory capital requirements and support its growth ambitions, while maintaining existing service levels'.***

Credit Union Viability

- Commission recommended a variety of factors to be taken into account in determining credit union viability
- *Capital Adequacy was* considered the dominant factor
- Other factors such as
  - *loan impairment and delinquency, investment impairment, high and rigid cost base, liquidity and the structure of liquidity, loan-to-asset ratio, governance capacity* …….
- CAMELS system viewed as preferable as a way of assessing viability. Tried and tested internationally drawing from prudential returns and on site monitoring.

Credit Union Viability

- CAMELS (5 key measures)
- The 5 ratios identified by the NCUA as the key ratios for US credit unions are under the headings *Capital*, *Asset Quality* and *Earnings*
- **CAPITAL**

  C1. Capital/Assets

  C2. Net Capital/Assets
- **ASSET QUALITY**

  A1. Delinquent Loans/Loans

  A2. Net Charge Offs/Average Loans
- **EARNINGS**

  E1. Return on Average Assets {*Net Income/Average Assets before Reserve Transfers*}

Credit Union Viability

- CRITICAL: Capital Adequacy (Reserves/Total Assets)
- Credit unions absorb losses from normal earnings. But there may be unanticipated losses which cannot be absorbed by normal earnings. Capital comes in handy in such situations to cushion off the losses.
- Adequate capital is a confidence booster. It provides the members and the regulator with confidence in the financial viability of the credit union and that it will remain in continuous existence. Confidence to the savers that money is safe; to borrowers that the credit union is in a position to give consideration to their credit needs.

Credit Union Viability

- CRITICAL: Return on Assets (Net Income/Total Assets)
- ROA is an indicator of 'profitability' and is intended to measure a deposit taker's efficiency in using its assets.
- A strong ROA ensures that a credit union can (i) provide a dividend to members (ii) and/or provide an interest rebate to members (iii) replenish reserves and increase capital levels (iv) reinvest in new products and services (v) engage in member outreach
- Poorly performing loans and investments and operational inefficiencies adversely impact on ROA

Figure 1: Surplus Generation

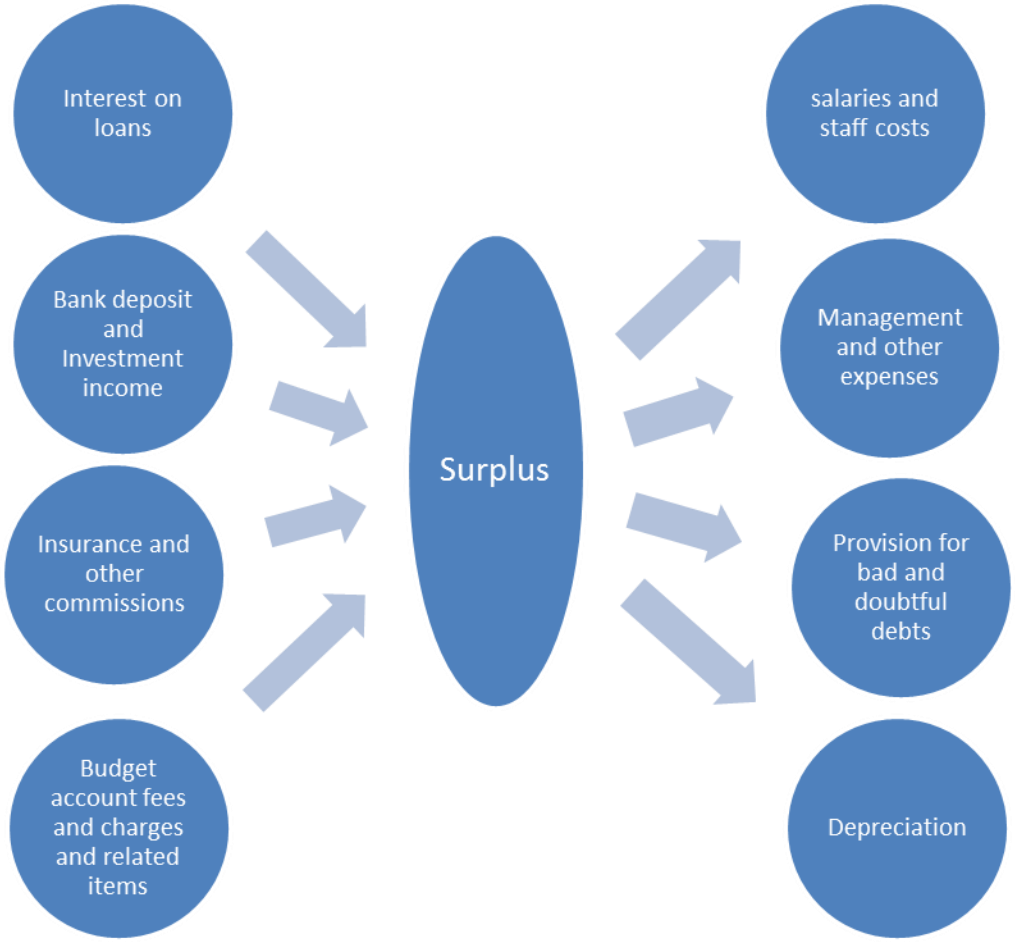
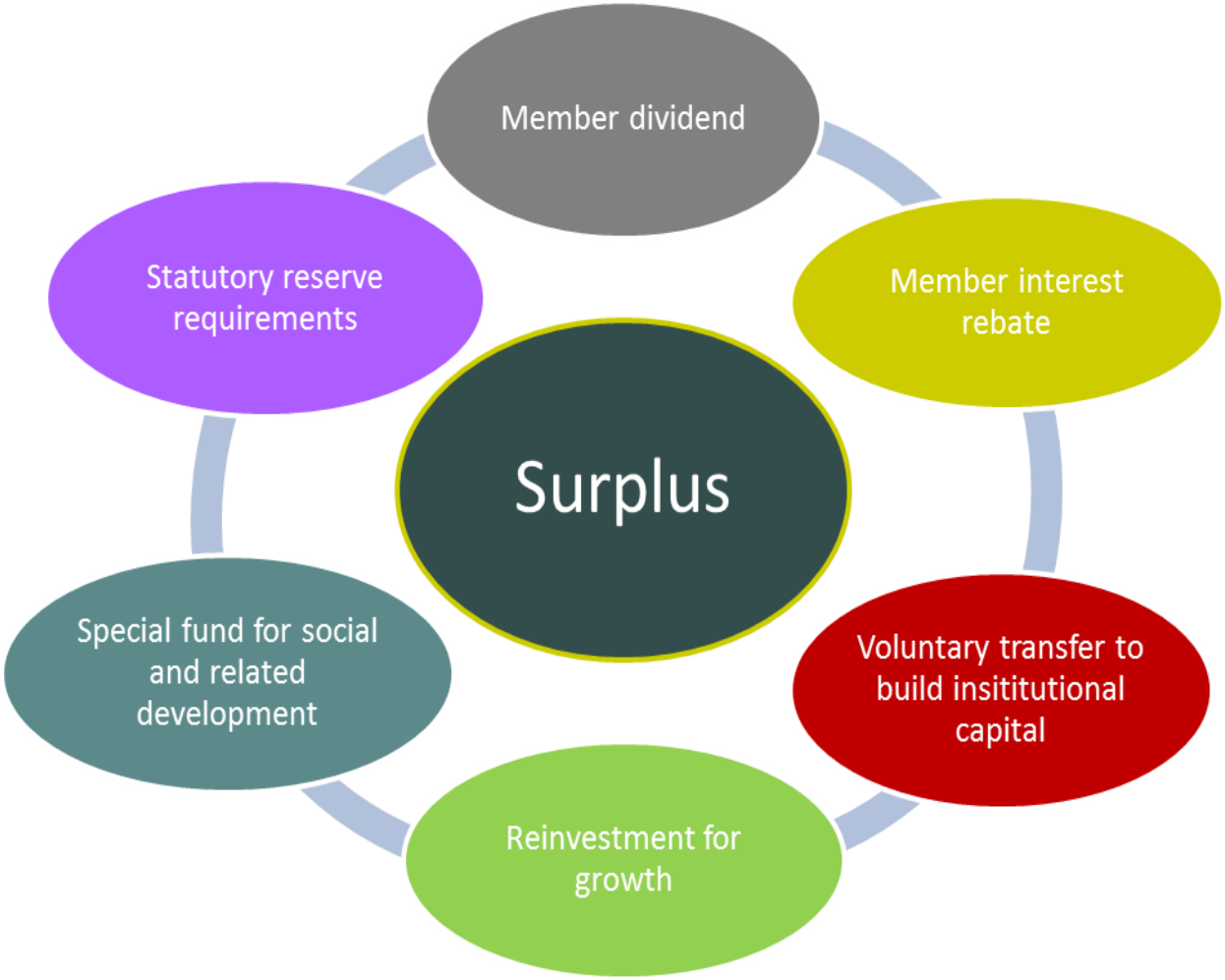


Figure 2: Surplus Uses



Z-Score

- The z-score is a viability risk measure that represents the probability that an individual financial institution's losses exceed its capital base.
- A higher z-score implies a decreased risk of insolvency and thus indicate increased stability.
- Z = $\frac{\mu+C}{\sigma}$ where *c represents the credit union's capital adequacy; μ = the credit union's ROA; σ = the standard deviation of the credit union's ROA.*
- The probability of insolvency is *defined as* $(ROA + C \leq 0)$
- Upper bound for probability of insolvency $\Pr(ROA \leq C) = \frac{1}{Z^2}$

Z-Score

- Z-Score ($Z = \frac{\mu + C}{\sigma}$) is a narrow definition of viability. It is however a useful way to think about viability as it implies

  1) *The higher the capital ratio, C, the more viable the credit uni*on

  2) *The higher the ROA, μ, the more viable the credit union*

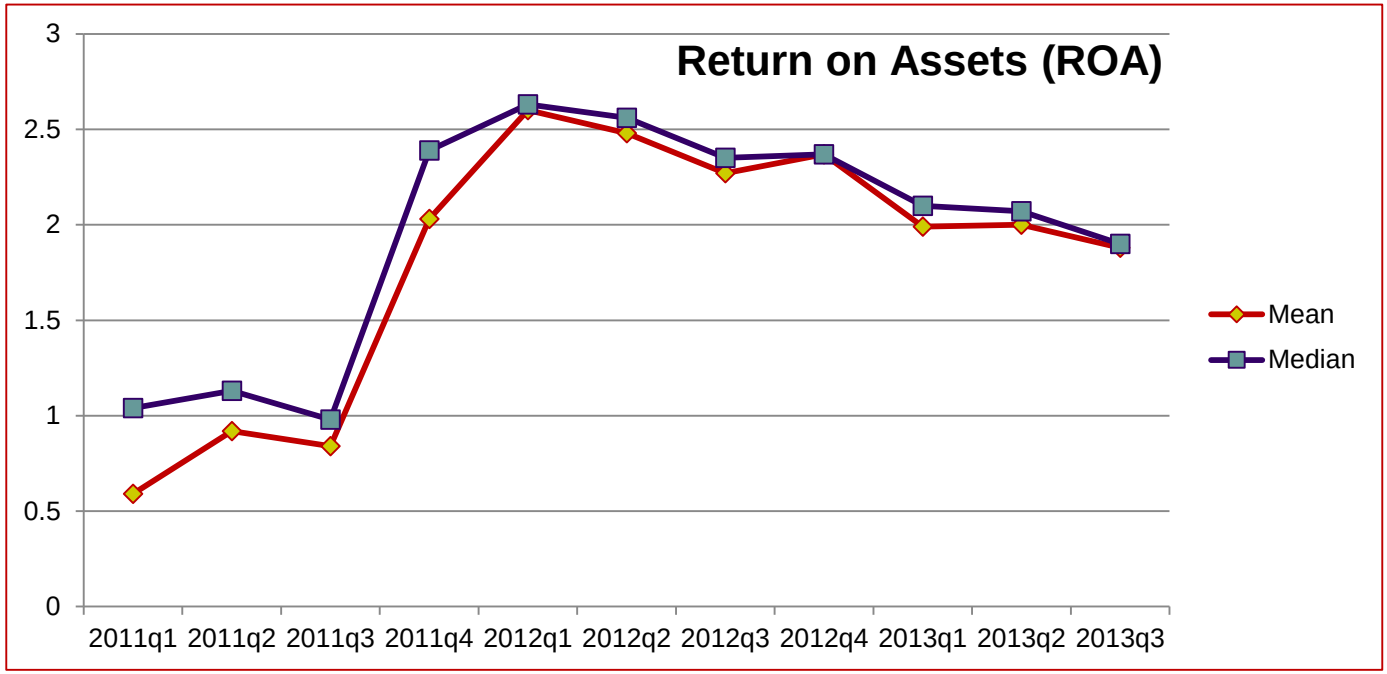
  3) *The more stable (less variable/ less volatile) the ROA, σ, the greater the viability of the credit union.*

Z-Score

- Z-Score is traditionally a measure of solvency
  - $(ROA + C \leq 0)$
- However the Central Bank argues that if a credit union's capital adequacy falls below 7.5% the credit union should be considered for the resolution process
- Let's explore viability in the context of
  - Capital ratio of less than 7.5%
  - Capital ratio of less than 10.0%

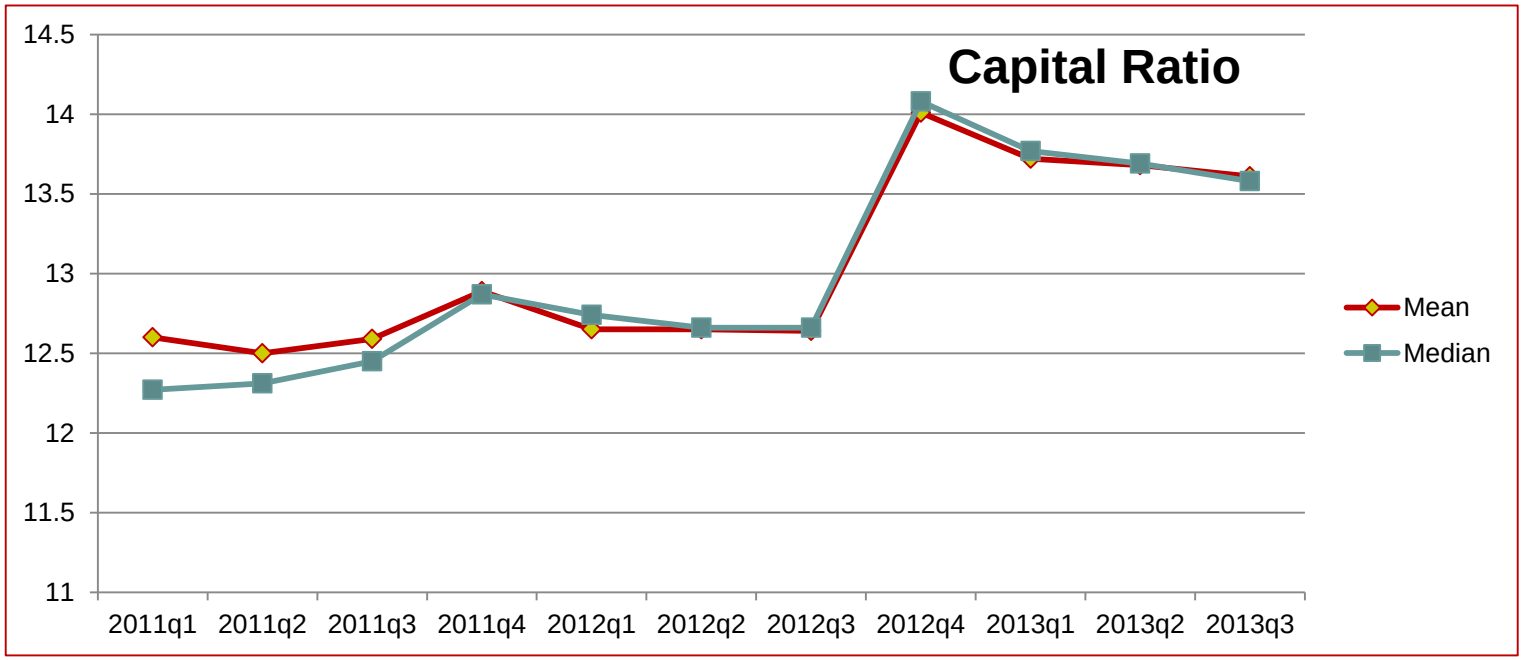
Z-Score Components (ROA)

- 377 credit unions 2011 Q1 to 2013Q3



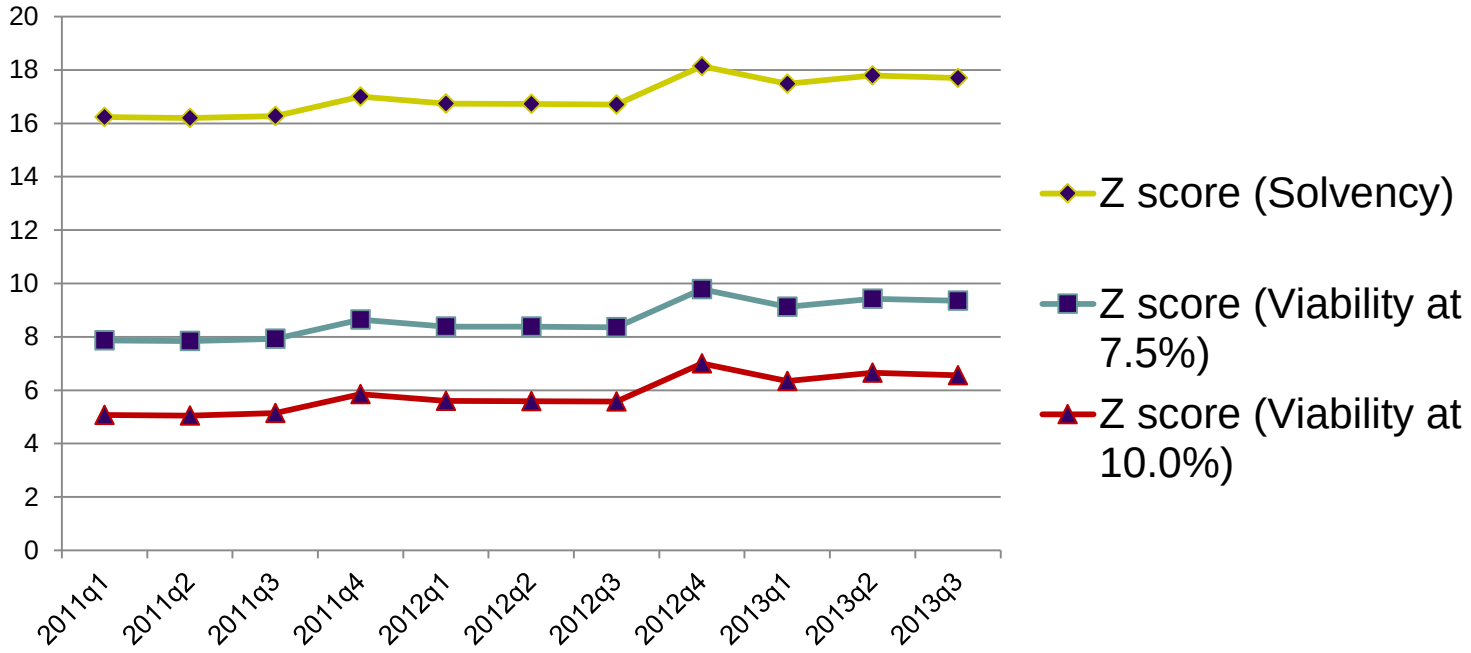
Z-Score Components (Capital Adequacy)

- 377 credit unions 2011 Q1 to 2013 Q3



Z-Score

- 377 credit unions 2011 Q1 to 2013 Q3



Relationship between Z-Score and Asset Size

- Solvency Perspective:

Z score (Solvency)				
Size	Number	Mean	Median	Standard Deviation
Less than €20M	2,088	15.58	13.7	9.85
€20M to €60M	1,422	18.11	16.39	12.62
€60M to €100M	328	18.64	15.26	15.01
Greater than €100M	305	19.88	19.86	9.14
Total	4,143	17	15.21	11.39

Relationship between Z-Score and Asset Size

- Z score (Viability at 7.5%):

Z score (Viability at 7.5%)				
Size	Number	Mean	Median	Standard Deviation
Less than €20M	2,088	8.04	6.73	6.16
€20M to €60M	1,422	8.99	8.02	7.88
€60M to €100M	328	9.53	7.27	8.29
Greater than €100M	305	10.26	9.7	5.21
Total	4,143	8.64	7.48	6.96

Relationship between Z-Score and Asset Size

- Z score (Viability at 10.0%):

Z score (Viability at 10.0%)				
Size	Number	Mean	Median	Standard Deviation
Less than €20M	2,088	5.52	4.32	5.19
€20M to €60M	1,422	5.95	5.16	6.63
€60M to €100M	328	6.5	4.91	6.14
Greater than €100M	305	7.06	6.54	4.13
Total	4,143	5.86	4.79	5.76

Summary

- Analysis reveals a steady upward march in the viability between 2011Q1 and 2013Q3.
- Average Z-Score value (based on capital ratio of 7.5%) is 9.35 for 2013 Q3.
- Suggests credit unions (on average) have a marginally greater than a 1% chance of not being viable
- Viability positively related to size.
- Analysis emphasises the importance of
  - Capital strength (*the stronger the better*)
  - ROA (*the higher the better*)
  - Stability in ROA (*the more stable (less volatile) the better*)

Viability -Evidence from elsewhere US (Growth studies)

- Larger credit unions tended to grow faster than their smaller counterparts (Goddard, McKillop and Wilson - JBF,2002).
- Much of this growth was via diversification into non-interest earning activities, albeit that this did not lead to enhanced returns for members (Goddard, McKillop and Wilson - JBF,2008).
- Externally generated growth also took place via acquisition and merger, whereby larger, well capitalised and technologically advanced credit unions acquired smaller, less capitalised counterparts that failed to adopt interactive and transactional internet banking technologies (Goddard, McKillop and Wilson - JFSR, 2009).
- Overall, the sector has become more concentrated over time. Nevertheless recent evidence suggests that many credit unions are still too small to take full advantage of scale economies (Wheelock and Wilson - RESTAT, 2011).

Viability -Evidence from elsewhere US (Diversification studies)

- Larger credit unions have superior performance (ROA) and lower performance variability
- Faster growing credit unions enjoy better performance and lower performance variability
- Higher capital ratio associated with higher risk adjusted performance.
- Lower loan to asset ratio associated better risk adjusted performance
- Credit unions located in US states with faster GSP growth are better performers and have reduced variability.
  - (Goddard, McKillop and Wilson - JFSR, 2009)

Viability -Evidence from elsewhere US (Merger studies)

- Research by Goddard, McKillop and Wilson suggests:-
- Greater risk of being acquired if the credit union has (i) a smaller asset size (ii) untapped membership potential (iii) been around longer (iv) reduced profitability (v) more liquidity (vi) a lower capital to asset ratio (vii) a lower loan-to-asset ratio
- Internet usage also a key determinant
  - Credit unions with no website are most likely to be acquired, followed by those with an informational site followed then by those with an interactive site and then transactional site. Internet usage also a key determinant
- (Goddard, McKillop and Wilson - JBF, 2014 and Economic Inquiry 2014)

Viability -Evidence from elsewhere US (Merger studies)

- Mergers do not generate efficiency gains superior to those that non-merging credit unions can generate through internal growth.
- Acquiring credit unions are likely to benefit if they have previous experience with mergers
- Mergers may reduce member satisfaction through reduction in staff or branches or due to integrating systems, procedures and technologies
- The potential for poor outcomes is greater when the combining credit unions have markedly different cultures
- The greatest cost benefits are achieved in mergers of equals(asset size). Minimal benefits occur in merging with small credit unions
- (Wilcox and Dopico – FRBSF, 2011)

Summary US studies

- Size is important – confers efficiencies advantages; helps speed up growth; leads to superior performance (ROA); reduces performance variability
- Growth is important - Faster growing credit unions enjoy better performance and lower performance variability; internal growth achieved through diversification; external growth through acquisitions
- Diversification is important – creates growth potential and reduces performance variability
- Mergers important? - Mergers do not generate efficiency gains superior to those that non-merging credit unions can generate through internal growth; greatest cost benefits are achieved in mergers of equals.

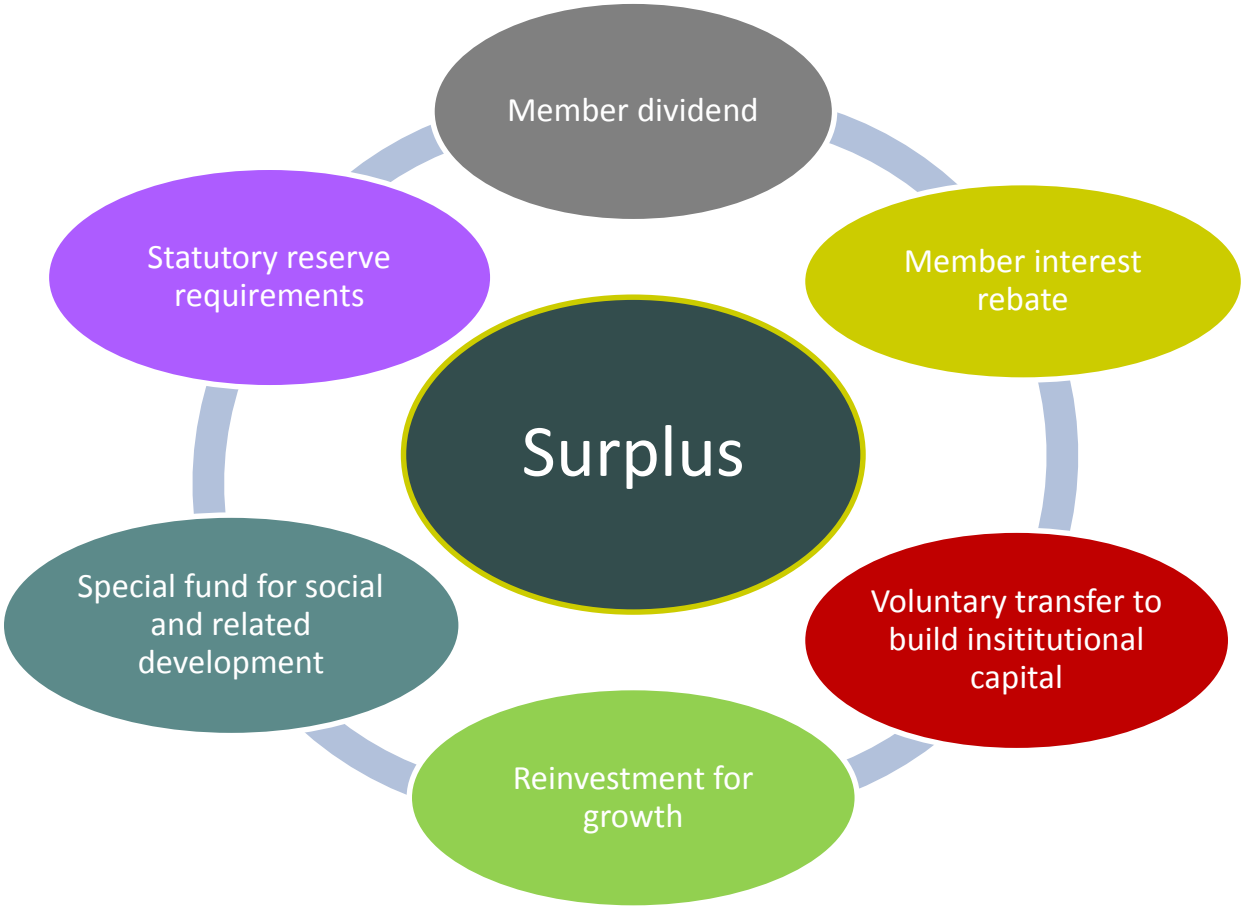
Viability more than performance metrics?

- *Social Responsibility*
  - Credit unions are about human and social development.
  - The credit union ideal is to extend services to all who need and can use them.
  - Decisions should be taken with full regard for the interests of the broader community within which the credit union members reside.
  - In terms of social responsibility an objective of credit unions is to encourage financial inclusion through the provision of small loans, low balance share accounts and financial advice and counselling to low-income individuals that are excluded by mainstream financial institutions.

Viability more than performance metrics?

- *Economic Democracy*
  - Democracy is at the heart of the credit union movement and is a core cooperative principle.
  - Well-functioning credit unions foster economic democracy in that they offer economic empowerment to their local community
  - Effective credit union democracy depends heavily on the willingness of members to exercise their rights of ownership to express their views to the board of directors and to hold them accountable for the progress of their credit union.

The End!


Member dividend
Member interest rebate
Voluntary transfer to build insititutional capital
Reinvestment for growth
Special fund for social and related development
Statutory reserve requirements
Surplus