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Credit Clusters and Ratings Families: Why Now?

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The concept of clusters or families is not new

- **Correlations that drive clustered credits have long been key elements of fundamental analysis**
  - Overlapping debt and shared economic base
  - Transfers to and from a city utility
  - State school funding, state intercept programs
  - Shared management and control
  - Directly related ratings (e.g., GO, Lease, Moral Obligation)
- **These correlations can affect credit positively or negatively**
  - Formally part of Moody's rating methodologies
- **Recent trends have brought the issue of correlated risks into stronger focus**
  - Competition for revenues, taxing headroom, pension cost shifting, demographic change
- **Governments have managed well through the recession and slow recovery, hence our stable sector outlooks**
  - But in many cases balances and resilience are lower than in 2008

Examples of ‘win-win” correlations and clusters abound

- Boston and its suburbs
  - City’s economic strength throughout the recession has bolstered the larger region
- Colorado Springs, Charlotte, Raleigh, and their utilities
  - Strong governance and management of growth and development
- Las Vegas/Clark County water and sewer districts
  - Four separate agencies and districts cooperate to ensure water supply to Las Vegas/Clark County
- North Carolina Local Government Commission
  - Broad, positive influence on LG debt management governance and throughout the state
- Texas Permanent School Fund
  - Direct credit support

And some are more “zero-sum” in nature

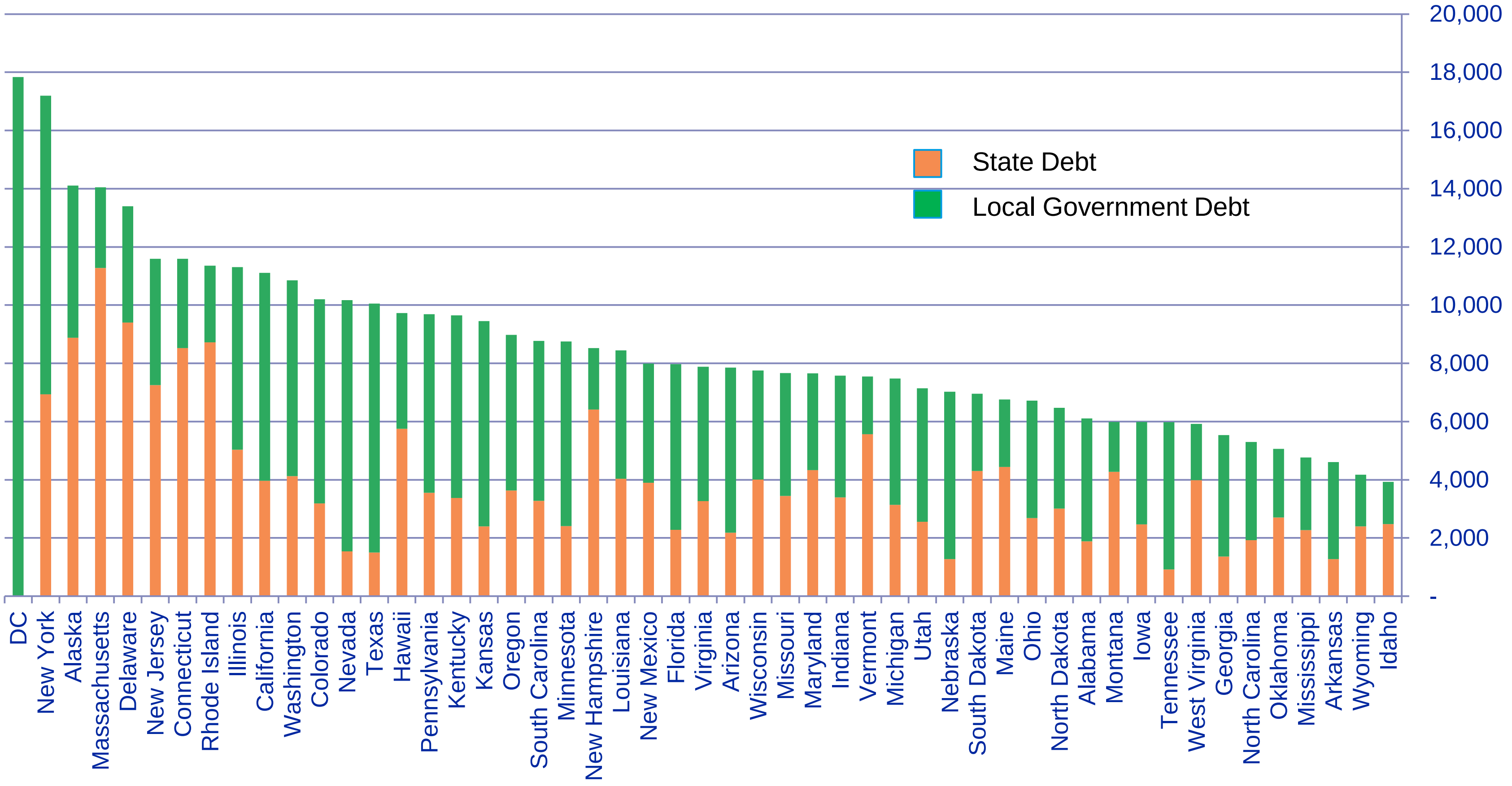
- States’ credit strength has always reflected their ability to shift costs downward
  - Can be budgetary or through regulatory shift
    - CA Tax Allocation Districts; Michigan’s school reform
- Local governments have this power as well
  - New York counties cutting sales tax distributions to underlying cities

There is downside: economic decline, weak governance, inflexible structure, high debt will affect related credits

- Harrisburg Authority
  - Water utility credit adversely affected by city's budget and financial problems
- Detroit
  - Long term economic and demographic decline affects Detroit Public Schools enrollment and state aid
  - Economic and financial stress also led to underinvestment in DWSD (now GLWA) plant within city core
    - Credit effect somewhat mitigated by proportion within larger system (20% of revenues, 88% of pipeage)
- Jefferson County sewer and the county GO
  - Sewer system leverage and debt structure exposed entire county
- Chicago water, sewer revenue debt
  - Credits constrained by Chicago debt and taxing headroom, governance; water is 2x city area
- Atlantic County, NJ
  - Atlantic City accounts for a quarter of the county's tax base and revenues
- New York Local Governments
  - Triborough Amendment limits ability of all LGs in state to control costs

High direct debt can become very moderate in context

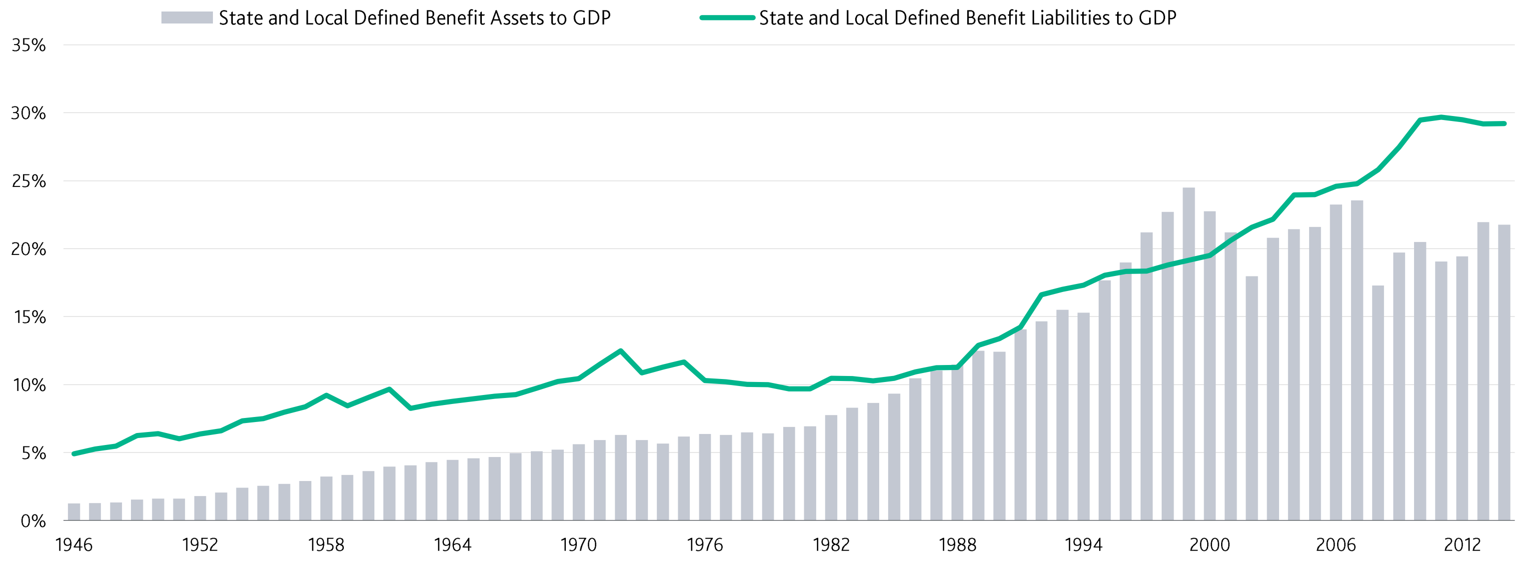
- Distribution of state and local debt is very different across states
  - Will vary widely between local governments within states as well



Sources: US Census Annual Survey of Sate and Lccal Governments

A new variable: Public sector pension liability buildup vs capacity-to-pay is at historical highs

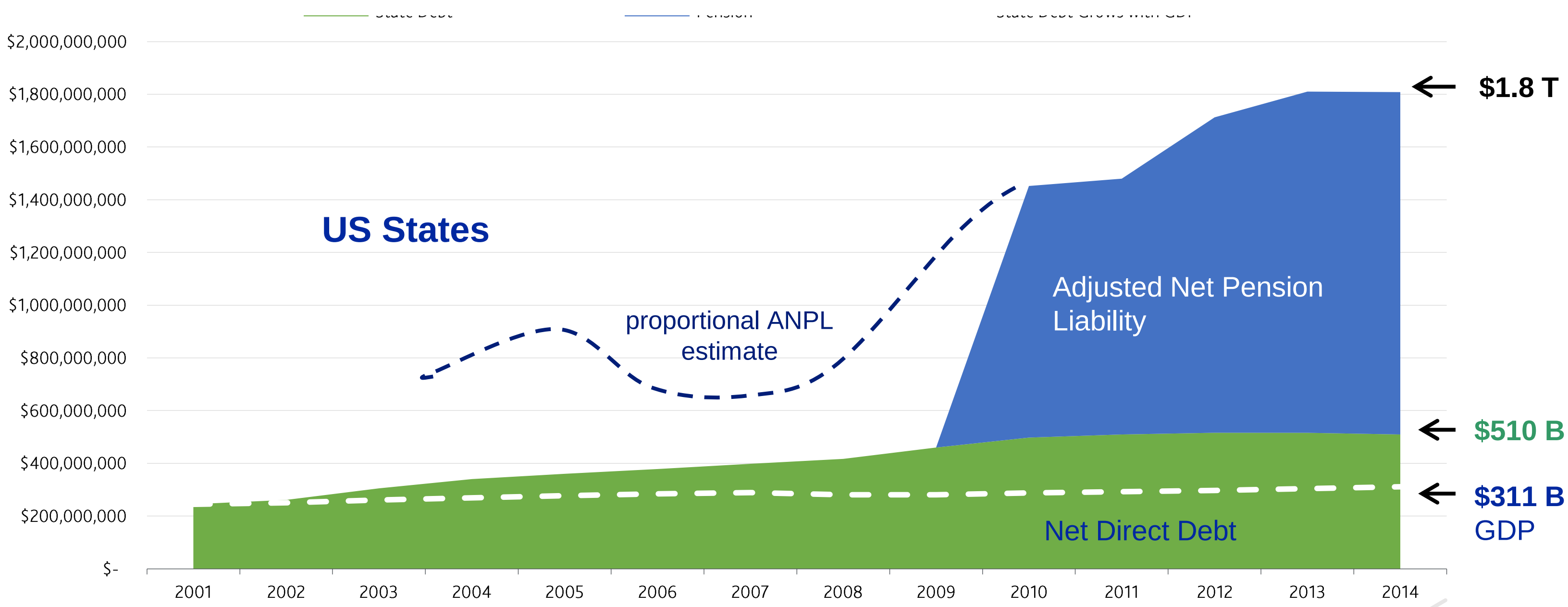
- Reflects demographics, benefit increases, contribution shortfalls, “lost decade” in stock market
- Assets remain concentrated in equities and other potentially volatile investments
- Translates into higher / more volatile contribution requirements for governments
- Munis now have very significant asset risk: sectoral exposure



Sources: US Bureau of Economic Analysis; Board of Governors of the Federal Reserve System, “Financial Accounts of the United States”

Thus, leverage in the public sector has increased

- US State direct debt has doubled since 2001, though still relatively low
  - But net pension liabilities have increased much faster



- Overall, leverage appears to have increased significantly

Credit families have a role in managing through slower growth, high leverage, or other structural change

- **State–level reform of cost-sharing pension plans**
  - Rhode Island, Florida, Colorado, Utah to name a few
  - Adoption of hybrid, cost- or risk- reduction features
    - Ohio; Tennessee; Wisconsin

- **Consolidation**
  - Schools in Michigan, Wisconsin
  - Princeton Boro and Princeton Township, NJ

- **Shared or contracted services**
  - Pontiac MI
  - Camden; increasing trend in NJ generally
  - San Bernardino CA
  - Fresno CA

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