

Data Standards for Government Reporting

What does it mean for municipal research?

Growth in data standards for government and industry

Data standards in industry (2005-2016): banks, public companies, mutual funds, rating agencies, surety industry, solar financing

2018

- Florida Open Fin'l Statement System (HB 1073)

2019

- CA Open Financial Statements Act (SB598)
- 1st local gov't digital CAFR posted (Will Co.)

2019

- Open Gov't Data Act
- GREAT Act
- Financial Transparency Act (HR 4476)

2020

- IL HR 0703

The Problem and The Solution

The Problem

- MSRB and other oversight bodies receive tens of thousands of government financial disclosures in PDF format each year
- Ratio analysis, peer comparison and aggregation difficult
- Inefficient manual data acquisition and entry
- Data quality control (fat fingers?)

The Solution

- Migrate away from PDFs and toward a machine-readable open data format
- SEC did this in 2008
- Third party data aggregators and in-house data geeks will easily extract the data required for further analysis

Unanswerable Research Questions

Questions:

- What is the nationwide total of unfunded state and local OPEB obligations?
- Which governments have the highest unfunded OPEB as a % of revenue?
- What's the distribution of discount rate assumptions for public pension plans in Pennsylvania?

Answer:

No one really knows. The source data is trapped in PDF financial statement footnotes.

City of St. Petersburg, Florida
Notes to the Financial Statements
September 30, 2017

NOTE 20 – OTHER POST-EMPLOYMENT BENEFITS - (Continued)

Funding Policy

All of the above benefit plans are provided through insurance companies or health maintenance organizations (HMO). Some health plan premiums are based on the benefits paid during the plan period ending March 31. The City recognizes the cost of providing benefits by expensing monthly premiums, on a pay-as-you-go basis. There are no plans at this time to fund the OPEB liability and therefore there are no plan assets. For the fiscal year ended September 30, 2017, the cost of retiree health care for 1,120 participants was \$13,241,865 of which \$4,811,974 was paid by the retirees. The City offers vision, dental and AD&D policies paid for entirely by active and retired employees.

Annual OPEB Cost and OPEB Obligation

The City received the current year results of an actuarial valuation report for retiree health benefits as of October 1, 2016 for fiscal year 2017. The valuation was completed under the requirements of GASB Statement 45. The development of the Net OPEB Obligation is listed below for the fiscal year ended September 30:

Funded Status and Funding Progress

As of September 30, 2017, the actuarial accrued liability for benefits was \$199,781,000, all of which was unfunded. The covered payroll (annual payroll of active employees covered by the Plan) was \$143,194,193 and the ratio of unfunded actuarial accrued liability (UAAL) to covered payroll is 139.5%.

What is a financial data standard?

Is it possible to create a common language for thousands of municipalities?

Current Liabilities		
Current Portion of Bonds & Notes Payable	Current Portion of Bonds Payable	Current Portion of Long-Term Debt
Current Portion of Long-Term Compensation Liability	Current Portion of Long-Term Liabilities	Long Term Liabilities – Current and Noncurrent Portions
Current Liabilities	Long Term Liabilities Due in Less than One Year	Long Term Liabilities Due Within One Year

Reck/Snow study found many different terms for the same reported fact

The development of a CAFR taxonomy is underway

A single common language *has* been successfully built.

It is used quarterly by 6,000 US publicly traded companies in scores of industries, different accounting practices, different business structures, management, etc.

It's called the U.S. GAAP Financial Reporting Taxonomy and it's required by the SEC for public companies since 2009.

[FASB - US GAAP Financial Reporting Taxonomy](#)

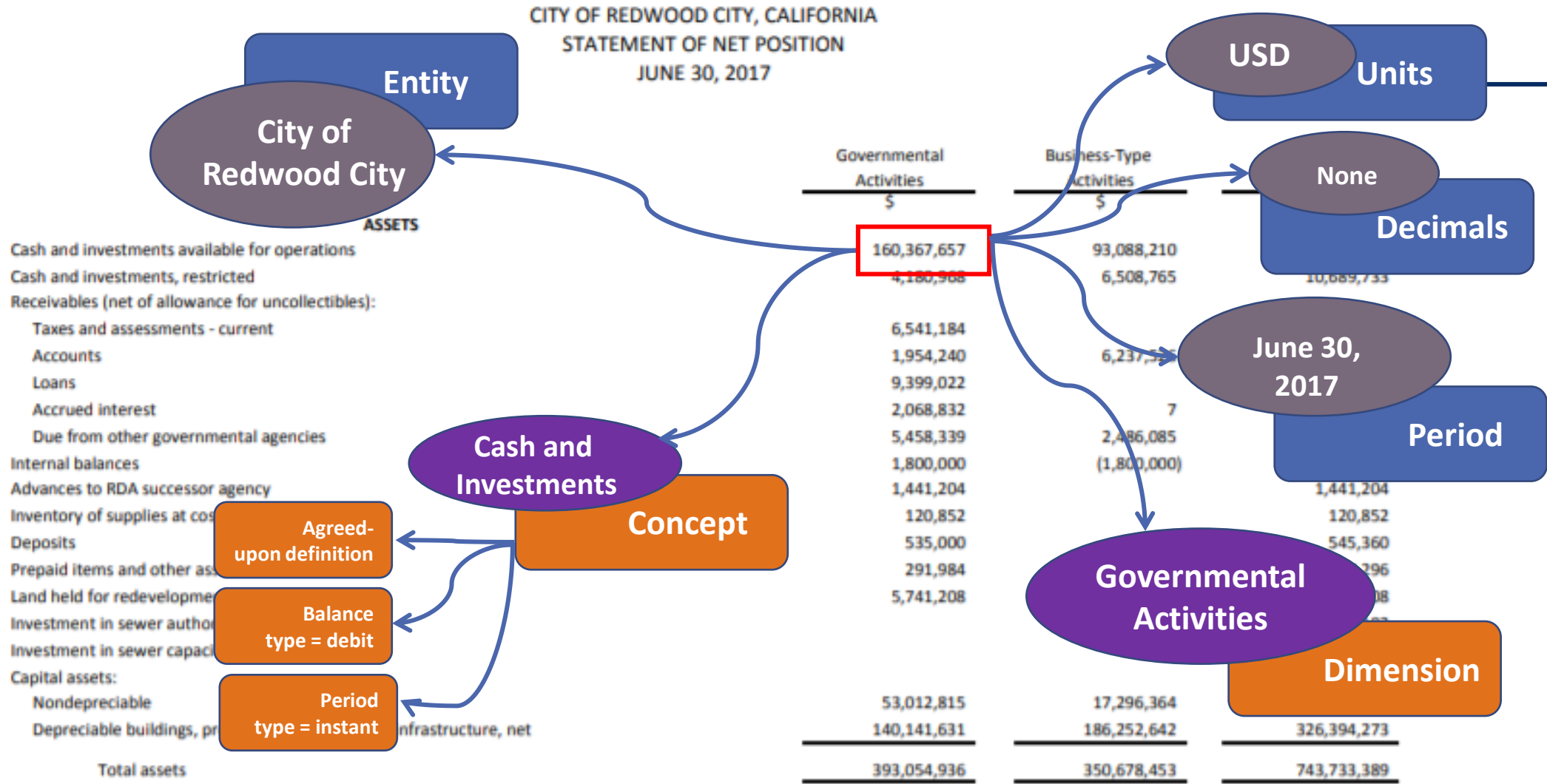
What is a financial data standard?

- Digital dictionary of clearly defined terms used to report information
 - Common language with clear, consistent definitions for all stakeholders (preparers, consumers)
 - Leverages accounting standards already used – FASB, GASB
 - Mechanism to make data machine-readable (automation)
- Goal: reduced cost of reporting, data collection and analysis, increased data accuracy and quality, increased timeliness



Data that is Better, Faster, Cheaper

What is a financial data standard?



Legislation and Government Initiatives

Open Government Data Act (HR 4174, January 2019)

- Sets the presumption that federal data should be reported as machine-readable structured data
- To improve data portability, openness and transparency
- Defines open data, requires use of open data by federal govt
- Establishes Chief Data Officers at federal agencies and CD Council

State government initiatives

- Florida (2018): All 1,650 local governments financial reporting to be in XBRL in FY 2022
- California: legislation to explore requiring a standard for local government reporting; vetoed by Governor (Oct 2019)
- Illinois: encourages voluntary adoption of XBRL for all IL municipalities; encourages Controller & Office of Tech & innovation to explore statewide taxonomy (Feb. 2020)

Financial Transparency Act (HR 4776)

- Introduced September 2019 with bi-partisan sponsorship
- Calls for 8 federal agencies to require standardized data when they collect disclosure
- This includes the MSRB

GREAT Act (HR 150, December 2019)

- Mandates data standards for grant reporting, includes single audit package requirements. Entities with grants > \$750k are affected

Financial Transparency Act

Introduced in the House of Representatives, Sept. 2019

Calls for the use of a common nonproprietary legal entity identifier that is available under an open license, and for *the use of data standards that render data fully searchable and machine-readable, enable high quality data through accompanying metadata, are documented in machine-readable taxonomies, are nonproprietary or made available under an open license, incorporate standards maintained by voluntary consensus standards bodies and are consistent with applicable accounting and reporting principles*



Requires eight federal financial regulatory agencies to adopt uniform data standards for the information they currently collect from regulated entities (includes the MSRB).



[Financial Transparency Act](#)

The GREAT Act



Applies to grant recipients of > \$750k



Requires the creation of a comprehensive and standardized taxonomy, covering all data elements reported by recipients of federal awards 2019



The standards to be developed *must render data “fully searchable and machine readable”, “be nonproprietary”, and “incorporate standards developed and maintained by voluntary consensus standards bodies”*



Since most local governments have federal grants, this will bring a structured data requirement to local governments for the first time



[Grant Reporting Efficiency and Agreements Transparency Act](#)

Why does this matter to muni analysts?



Many linkages between various levels of government

Loans, grants, intergovernmental transfers



Lots of intergovernmental data collection

States: debt monitoring, fiscal oversight, education monitoring, etc.

Feds: grant monitoring and compliance, census of local governments



Data standards introduced by one level of government impacts others



Municipal disclosure will likely be subject to data standard(s)



Taxonomies won't cover every single data point



Analytic (user) community can contribute to standard development

Machine Readable CAFRs

- Replace PDFs with HTML (web pages) containing special tags that denote key financial items
- Easier to compare issuers with each other and across time
- Same technology used by SEC for Corporate 10-Ks
- More examples at <https://xbrl.us/xbrl-taxonomy/2019-cafr/>

City of Alexandria, Virginia Statement of Net Position June 30, 2018

Exhibit I

	Primary Government Governmental Activities	Component Units
ASSETS		
Cash and Cash Equivalents	\$ 336,089,928	
Cash and Investments with Fiscal Agents Receivables, Net	219,874,961	
Long-term Portion of Notes Receivable	298,834,712	
Accrued Interest	-	
Due From Other Funds	69,715	
Due From Other Governments	-	
Inventory of Supplies	40,659,559	
Prepaid and Other Assets	3,451,507	
Net Pension Asset	8,484,313	
Capital Assets:		
Land and Construction in Progress	-	
Other Capital Assets, Net	188,292,794	
Capital Assets, Net	673,298,167	
	861,590,961	12,792,893
Total Assets	1,769,055,656	106,456,668

Attributes	
Cash and Cash Equivalents	
Tag	cafr:CashAndCashEquivalents
Fact	336,089,928
Axis	Financial Reporting Entity [Axis] - cafr:FinancialReportingEntityAxis
Member	Primary Government Activities [Member] - cafr:PrimaryGovernmentActivitiesMember
Axis	Basis of Accounting [Axis] - cafr:BasisOfAccountingAxis
Member	Accrual, Basis of Accounting [Member] - cafr:AccrualBasisOfAccountingMember

Machine Readable CAFRs

Will County, Illinois
 Balance Sheet
 Governmental Funds
 November 30, 2018

STATEMENT 3

	General Fund	County Motor Fuel Tax Fund	Building Will Fund	Other Governmental Funds	Total Governmental Funds
ASSETS					
Cash and cash equivalents	\$ 11,045,325	\$ 10,848,410	\$ 59,585,803	\$ 62,500,953	\$ 143,980,491
Investments	67,910,929	62,200,001	60,418,898	55,438,288	245,968,116
Restricted cash and cash equivalents	44,036				558,425
Accrued interest	722,702				621,833
Property tax receivable, net	4,558,824				822,105
Property tax receivable-2018	107,074,890				538,261
Accounts receivable	3,329,190				957,359
Other receivables	2,523				2,523
Due from other funds	754,647				682,414
Due from other governmental agencies	14,238,312				666,090
Inventory	0				855,568
Prepaid items	7,921				861,831
TOTAL ASSETS	\$ 209,689,299	\$			515,016

Attributes

Due from other government entities

Tag	us-cafr:DueFromOtherGovernmentEntities
Fact	14,238,312
Axis	Type of governmental funds [axis] - us-cafr:TypeOfGovernmentalFundsAxis
Member	General fund [member] - us-cafr:GeneralFundMember
Period	As of 11/30/2018
Measure	USD
Decimals	0
Sign	Positive

Viewing a CAFR using the SEC's open source Inline XBRL Viewer.

Live Demo

Machine readable CAFR examples

County of Albemarle, Virginia as of June 30, 2017

Ez-XBRL

City of Columbus, Ohio as of December 31, 2017

IRIS Business Services LLC

City of Los Angeles, California as of June 30, 2018

IRIS Business Services LLC

City of Los Angeles, California as of June 30, 2018
(Assets Only)

Allyson R. Ugarte – Sole Practitioner Member

County of McHenry Illinois as of November 30, 2017

DataTracks

County of San Diego, California as of June 30, 2018

IRIS Business Services LLC

County of Will, Illinois as of November 30, 2018

IRIS Business Services LLC

County of Will, Illinois as of November 30, 2017

IRIS Business Services LLC

County of Will, Illinois as of November 30, 2016

IRIS Business Services LLC

Can tag notes and tables as well as numbers!

<https://xbrl.us/xbrl-taxonomy/2019-cafr/>

CAFR Taxonomy, Demonstration Release

CAFR Demonstration Release Version 0.2 – Review and Comment

The list of elements for this release with selected metadata are shown below and can be copied or downloaded from this location. Use the form below the list to provide comment on the Demonstration Release. There's also an [Excel version posted here](#) if you're unable to use Google.

In addition to Release Version 0.2, the Working Group has developed a set of additional concepts not in this release that represent pension and OPEB (other post-employment benefits) data of particular interest to municipal securities analysts, and welcomes feedback on labels and definitions. These concepts are prefixed in the Concept Number column as P-OPEB_.

Concept Numbr	Element	Label, standard	Documentation	Type	referenc
1	NameOfGovernment	Name of government	Report the name of the primary government (name of reporting entity).	xbrl:stringItemType	US-CAFI
2	UnitIdentificationNumber	Unit identification number	Report the unit identification number issued by the regulator or authority as the case may be	xbrl:stringItemType	US-CAFI
3	LegalEntityIdentifier	Legal entity identifier	Report the legal entity identifier issued by the regulator or authority as the case may be	xbrl:stringItemType	US-CAFI
4	EmployerIdentificationNumber	Employer identification number	Report the employer identification number issued by the regulator or authority as the case may be	xbrl:stringItemType	US-CAFI
5	TypeOfGovernment	Type of government	Report the type of government namely whether it is a State or County or City or Town or Village or Borough or Other general purpose government or School district or Special district	us-cafr_type:TypeOfGovernment	US-CAFI
6	ReportingCurrency	Reporting currency	Report the reporting currency, at present its USD	us-cafr_type:ReportingCurrency	US-CAFI
7	OrderOfMagnitude	Order of magnitude	Report the level of rounding off for monetary values namely whether it is Actuals or Thousands or Millions or Billions.	us-cafr_type:OrderOfMagnitude	US-CAFI
8	ReportingFrequency	Reporting frequency	Report the reporting frequency, at present its Annual	us-cafr_type:ReportingFrequency	US-CAFI
9	Can Do	Fiscal start date	Report the fiscal start date (first date of reporting period)	xbrl:dateItemType	US Cens
10	FiscalEndDate	Fiscal end date	Report the fiscal end date (last date of reporting period)	xbrl:dateItemType	US Cens
11	NameOfAuditFirm	Name of audit firm	Report the name of external audit firm which has audited the comprehensive annual financial statements [CAFR] of the reporting entity and issuing the audit opinion.	xbrl:stringItemType	US-CAFI
12	AuditStatus	Audit status	Report the audit status of reporting statements namely whether it is audited or unaudited or reviewed or unreviewed	us-cafr_type:AuditStatus	US-CAFI
13	AuditOpinion	Audit opinion	Report the audit opinion expressed by the auditor namely whether it is qualified or adverse or unmodified or disclaimed	us-cafr_type:AuditOpinion	US-CAFI
14	DateOfAuditOpinion	Date of audit opinion	Report the date on which audit opinion was expressed by the auditor	xbrl:dateItemType	US-CAFI
15	NameOfState	Name of state	Report the name of state to which the reporting entity belongs	xbrl:stringItemType	US-CAFI
16	DateOfTransmittal	Date of transmittal	Report the date of transmittal	xbrl:dateItemType	US-CAFI
17	DocumentTitle	Document title	Report the document title	xbrl:stringItemType	US-CAFI
18	TotalAnnualFinalAppropriationsForAllFunds	Total annual final appropriations for all funds	Report the total annual final appropriations for all funds for the reporting period	xbrl:monetaryItemType	US-CAFI
19	AverageNumberOfUtilityCustomers	Average number of utility customers	Report the average number of utility customers	xbrl:decimalItemType	US-CAFI
20	InsideMillage	Inside millage	Report the inside millage (Millage is a tax rate on property, expressed in mills of the property's value and is used to calculate property taxes)	num:percentItemType	US-CAFI
21	OutsideMillage	Outside millage	Report the outside millage (Millage is a tax rate on property, expressed in mills of the property's value and is used to calculate property taxes)	num:percentItemType	US-CAFI
22	TotalPropertyTaxRate	Total property tax rate	Report the total property tax rate. Property taxes are ad-valorem taxes levied on an assessed valuation of real property.	num:percentItemType	US Cens
23	PropertyTaxValuation	Property tax valuation	Report the property tax valuation. Property taxes are ad-valorem taxes levied on an assessed valuation of real property.	xbrl:monetaryItemType	US Cens

DELTA AIR LINES, INC.
Consolidated Statements of Operations

(in millions, except per share data)	Year Ended December 31,		
	2017	2016	2015
Operating Revenue:			
Passenger:			
Mainline	\$ 29,105	\$ 28,105	\$ 28,898
Regional carriers	5,714	5,672	5,884
Total passenger revenue	34,819	33,777	34,782
Cargo	729	668	813
Other	5,696	5,194	5,109
Total operating revenue	41,244	39,639	40,704

When filings are formatted like this:

It becomes inexpensive to create public information resource like this:

YAHOO! FINANCE Search for news, symbols or companies Q

Delta Air Lines, Inc. (DAL) ★ Add to watchlist

NYSE - Nasdaq Real Time Price. Currency in USD

Annual | Quarterly

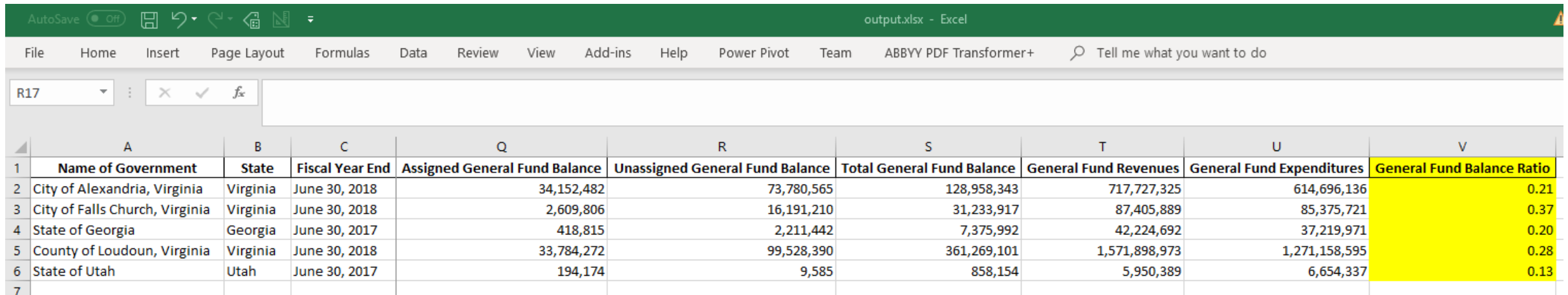
Income Statement All numbers in thousands

Revenue	12/31/2017	12/31/2016	12/31/2015
Total Revenue	41,244,000	39,639,000	40,704,000
Cost of Revenue	29,118,000	27,539,000	28,663,000
Gross Profit	12,126,000	12,100,000	12,041,000

In-House Systems Readily Extract The Data

A simple computer program can locate all the Inline XBRL tagged data and organize it into tabular data for analysis in a spreadsheet or database

```
D:\parse_cafr_ixbrl>python getix.py
Loading test_data\Alexandria-2018-Statements.htm...
Loading test_data\FallsChurch-2018-Statements.htm...
Loading test_data\ga-20190116.htm...
Loading test_data\Loudoun-2018-Statements.htm...
Loading test_data\ut-20190117.htm...
Generated output.csv.
Generated output.xlsx
```



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	Q	R	S	T	U	V
1	Name of Government	State	Fiscal Year End	Assigned General Fund Balance	Unassigned General Fund Balance	Total General Fund Balance	General Fund Revenues	General Fund Expenditures	General Fund Balance Ratio
2	City of Alexandria, Virginia	Virginia	June 30, 2018	34,152,482	73,780,565	128,958,343	717,727,325	614,696,136	0.21
3	City of Falls Church, Virginia	Virginia	June 30, 2018	2,609,806	16,191,210	31,233,917	87,405,889	85,375,721	0.37
4	State of Georgia	Georgia	June 30, 2017	418,815	2,211,442	7,375,992	42,224,692	37,219,971	0.20
5	County of Loudoun, Virginia	Virginia	June 30, 2018	33,784,272	99,528,390	361,269,101	1,571,898,973	1,271,158,595	0.28
6	State of Utah	Utah	June 30, 2017	194,174	9,585	858,154	5,950,389	6,654,337	0.13
7									

Examples – Automated Analytic tools

- User-defined ratios
- Data from machine-readable CAFR in XBRL
- No manual data entry
- Metadata associated with each fact is retained
- Works with many commercial software applications

City of Alexandria, VA
Local Government Rating Report
June 30, 2018

Using the Really Simple Analyst Tool: Municipal Credit Ratio Template

	Ratio Legend	Balances and Ratios 06/30/2018
Economy/Tax Base		
Total full value (Property Tax Value) (\$000s)	A	41,418,852
Population	B	154,500
Full Value Per Capita (\$)	(A*1000)/B	268,083
Median Family Income, Local	C	93,370
Medium Family Income, US	D	60,336
Median Family Income (% of US Median)	C/D	154.75%
Finances		
Operating Revenue (\$000s)	E	717,727
General Fund assigned fund balance (\$000s)	F	34,152
General Fund unassigned fund balance (\$000s)	G	73,781
General Fund (assigned + unassigned) (\$000s)	F+G	107,933
Cash Balance (\$000s)	H	143,931
Cash Flow Notes (\$000s)	I	-
Cash Balance, net of Cash Flow Notes (\$000s)	H-I	143,931
Fund Balance as a % of Revenue	(F+G)/E	15.04%
Cash Balance as a % of Revenue	(H-I)/E	20.05%
Debt/Pensions		
Net Direct Debt (G.O. Bonds) (\$000s)	J	595,021
Net Pension Liability - unadjusted (\$000s)	K	163,020
Net Direct Debt / Full Value (%)	J/A	1.44%
Net Direct Debt / Operating Revenues (x)	J/E	0.83 x
Net Pension Liability / Full Value (%)	K/A	0.39%
Net Pension Liability / Operating Revenues (x)	K/E	0.23 x

Examples – Automated Analytic tools

- User-defined ratios
- Data from machine-readable CAFR in XBRL
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Relevant Ratios used by Municipal Credit Analysts

1 Required Annual Pension Payment plus Annual OPEB Payment as % of Total Government Funds Expenditures		
Required Annual Pension Payment	19,252,275	
Annual OPEB Payment	14,479,002	
Total	33,731,277	
Total Government Funds Expenditures	229,109,853	
Ratio	14.7%	
2 OPEB Payment as % of Total Government Funds Expenditures		
Annual OPEB Payment	14,479,002	
Total Government Funds Expenditures	229,109,853	
Ratio	6.3%	
3 Pension Plan Active / Beneficiaries Ratio		
Pension Plan Active Employees	2,264	
Pension Plan Retirees and Beneficiaries	2,421	
Ratio	0.94	
4 Unfunded Pension Liability Per Capita (Pension score adjustment)		
Unfunded Pension Liability	90,703,232	
Permanent Population	253,585	
Ratio	358	(At or belc
5 Unfunded Pension Liability to Income (Pension score adjustment)		
Unfunded Pension Liability	90,703,232	
Personal Income	7,659,789,000	
Ratio	1.18%	(At or belc
6 Net Pension Liability as % of Full Market Value		
Net Pension Liability	90,703,232	
Full Market Value (Taxable Property)	15,906,451,780	
Ratio	0.57%	(Kroll considers under 1% to be AAA)
7 Fixed Costs as % of Government Expenditures		
Fixed costs (Debt service + annual actual pension contributions + annual OPEB contributions)		
Debt service	-	
Required Annual Pension Payment	19,252,275	
Annual OPEB Payment	14,479,002	
Total Fixed Costs	33,731,277	
Government Expenditures	229,109,853	
Ratio	14.7%	Note same result as ratio #1 (since debt service here is zero)
8 Dollar difference between pension ADC and actual pension contribution as % of spending		

Inline XBRL

Highlight all tags

Line item
P- OPEB_14:PensionActuariallyDetermin

Value
\$ 19,252,275.00

Period
2016-10-01 to 2017-09-30

us-cafr: TypeOfActivitiesAxis
us-cafr:GovernmentalActivitiesMember

Units
iso4217:USD

Entity
City of St. Petersburg, FL

Examples – New Research Capabilities

- FASB proposed new goodwill accounting rules
- CFA Institute used XBRL data from S&P 500 company filings to analyze the impact. Results:
- 45% of the equity of S&P 500 companies would be wiped out
- Reduction in profits and assets \$5.6 trillion over 10 years

HOW Much? \$5.6 Trillion? XBRL Data Supports Goodwill Debate

Posted on January 24, 2020 by [Editor](#)

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A new CFA Institute comment letter demonstrates the value of using structured data to inform debate and underpin policy decisions.

US standard setter the FASB is weighing up alternatives to existing accounting treatments for Goodwill. It's a *thorny issue*, currently undergoing review by FASB (and IASB). FASB is weighing up whether to continue to assess goodwill by annual evaluations, or whether to return to the prior approach, where a set portion of goodwill was written down each year.

CFA Institute argues that FASB has not properly considered the magnitude of this change. Using data from Calcbench (an innovative data provider that makes extensive use of SEC XBRL filings), CFA Institute was able to demonstrate that reverting to an amortization approach regarding goodwill would wipe out 45% of the equity of companies in the S&P500, and in total, reduce profits and assets by \$5.6 trillion over a 10-year period.

Data-backed arguments such as this are persuasive, and the widespread use of XBRL tagging today makes drawing on this data relatively straightforward. Hopefully, examples like this will encourage more policymakers around the world to use more and more XBRL data as part of their own analysis.

Digitization vs Digitalization

Digitization

- Conversion of information to a format that can be understood by machines
- Examples: PDF to XBRL, paper photo to .JPEG, paper medical chart to electronic medical record (EMR)

Digitalization

- Use of digital technologies and digitized data to change social, business, and economic behavior
- Examples: Machine learning, robotic process automation, advanced analytics, cognitive computing, predictive modeling, blockchain

Frontiers of Municipal Data

The following slides provide examples of nontraditional data sources and applications. This is *not* a comprehensive listing. This is *not* a recommendation or endorsement of a product or analytic approach.

Wall Street
Journal Sept.
8, 2019

BUSINESS
**China Says Growth Is Fine. Private Data
Show a Sharper Slowdown.**

Beneath China's stable headline numbers, there is a growing belief that the real picture is much worse

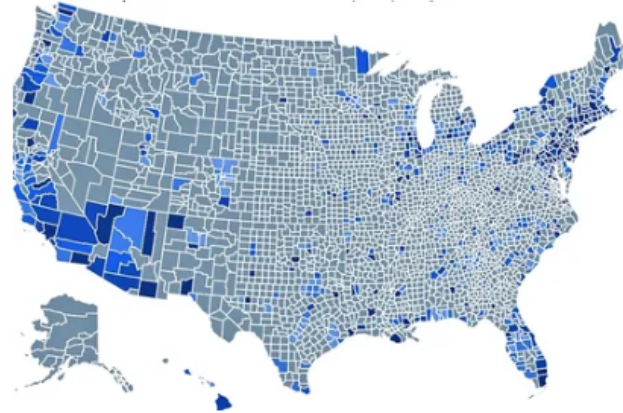


<https://www.wsj.com/articles/china-says-growth-is-fine-private-data-show-a-sharper-slowdown-11567960192?mod=searchresults&page=3&pos=14>

American County Review



RISK ASSESSMENT DATA FOR MUNICIPAL BONDS - CITY, COUNTY, & SCHOOL DISTRICT



What do we do?

ACRe Data aggregates data from numerous non-subjective sources, and creates from that data a unique ranking system that is not currently available from other vendors. ACRe Data is the largest provider of Alternative Data for the U.S. Municipal Bond marketplace.

Each City/Town, County, and School District, Opportunity Zone, and State in the United States is ranked using a proprietary methodology that analyzes census data, crime data, environmental data, personal infrastructure data and climate change data.

Ranking data is updated quarterly - within 30 days of each quarter end. **Latest Ranking data is as of: 12/31/2019**

Rankings are provided at:

City / Town level vs all other Cities / Towns at the State and Nation level - 29,000 Cities and towns in America

County level vs all other Counties at the State and Nation level - 3,141 Counties in America

School District vs all other School Districts at the State and Nation level - 14,300 School Districts in America

Geo-ID, FIPS Code	0500000US22095	22095	BBID:	1031214
City, State, Population	St. John the Baptist Parish, Louisiar	43,565	✓	Top 33.3% Rank (Best)
Number of Data Elements Utilized (59 is full set)	59		⚠	Middle 33.3% Rank
			✗	Bottom 33.3% Rank (Worst)

National Rank	All Populations	(Total number of Counties: 3,141)	✗	2,353
National Rank	Population > 10,000	(Total number of Counties: 2,428)	✗	1,861
National Rank	Population > 100,000	(Total number of Counties: 598)		
Rank within State	All Populations	(Total Number of Counties in Louisiana: 64)	⚠	46
Rank within State	Population > 10,000	(Total Number of Counties in Louisiana: 59)	⚠	45
Rank within State	Population > 100,000	(Total Number of Counties in Louisiana: 14)		

Data Utilized for Ranking Calculation	Latest Date of Sourced Data	National Rank	State Rank
Population	Change 2016 - 2018	⚠ 2047	⚠ 31
Population	Average Annual Change (2009-2018)	✗ 2998	✗ 60
Median Income	Change 2016 - 2018	⚠ 1214	✓ 19
Median Income	Average Annual Change (2009-2017)	⚠ 1730	⚠ 25
Unemployment Rate	2017	✗ 2129	⚠ 33
Unemployment Rate	Change 2016 - 2017	⚠ 1529	⚠ 24
Unemployment Rate	Average Annual Change (2009-2017)	⚠ 1573	⚠ 27
Poverty Rate	2017	✗ 2115	⚠ 22
Poverty Rate	Change 2016 - 2017	⚠ 1809	⚠ 28
Poverty Rate	Average Annual Change (2010-2017)	✗ 2208	⚠ 42
County Debt per Resident	2012	✗ 3122	✗ 63
School District Debt per Student	2017	✗ 2785	✗ 62
Industry Concentration Risk	2016	⚠ 1110	✓ 21
Firm Concentration Risk	2016	✓ 292	✓ 5
Climate Change exposure to	Air Quality	⚠ 1309	✗ 50
Climate Change exposure to	Water Quality	✓ 176	✓ 12
Climate Change exposure to	Rising Sea Levels (Coast)	✗ 3119	✓ 1
Climate Change exposure to	Heat Index	✗ 3082	✗ 59
Declarations of Disaster	Incidents (2009 - Q2 2019)	✓ 348	✓ 1
Flood Plain risk (100 year flood)	Q3 2018	✗ 3068	✗ 54
Drought Conditions	Q2 2019	✓ 1	✓ 1
Superfund Sites	Q4 2017	✓ 1	✓ 1
Coal Ash pits / landfills	Q3 2018	✓ 1	✓ 1
Fracking Wells	Q3 2018	⚠ 2101	✓ 8
Counties at Risk (CDC)	Q4 2017	✓ 1	✓ 1
Lyme Disease	Q2 2018	✓ 1	✓ 1

Explore the breadth of Thinknum Alternative Data

Thinknum Alternative Data provides daily updates on most public and private companies.

Datasets

Thinknum Alternative Data provides over 35 datasets per company covered and is continuously expanding the collection to allow analysis across more metrics.



Job Listings

Track hiring and firing trends of a company, filtered by title, location, type, date, category and date of posting.



LinkedIn Profile

Access historical LinkedIn company profile data on number of followers, employee headcount and more



Store Locations

Track store growth and overlay competitors locations with Thinknum's store location data.



Discounted Products by Vendor

Access historical data on average percentage of discount per company by vendor.



Products by Geo by Vendor

Track pricing and average discount for a specific product per vendor by location



Products by Vendor

Track pricing and average discount for a company per vendor



Car Inventory

Track inventory size, average mileage, model, year, and pricing from major car dealers



Apple Store Ratings

Access historical App Store data - release date, ratings, pricing and more.



Auction Results

Track auction results from major auctioneers worldwide including datapoints such as product type, closing...



Bank Account Rankings

Track bank accounts by APY category



Bestselling Products by Vendor

Track bestselling products by vendor



Community Members

Track members growth per community

Thinknum

New Way to Look at Debt Service Coverage

S&P Global
Ratings

Ratings

Research & Insights

Sectors

Regulatory

Products & Benefits

Events

COMMENTS — 22 Jan, 2020 | 16:21

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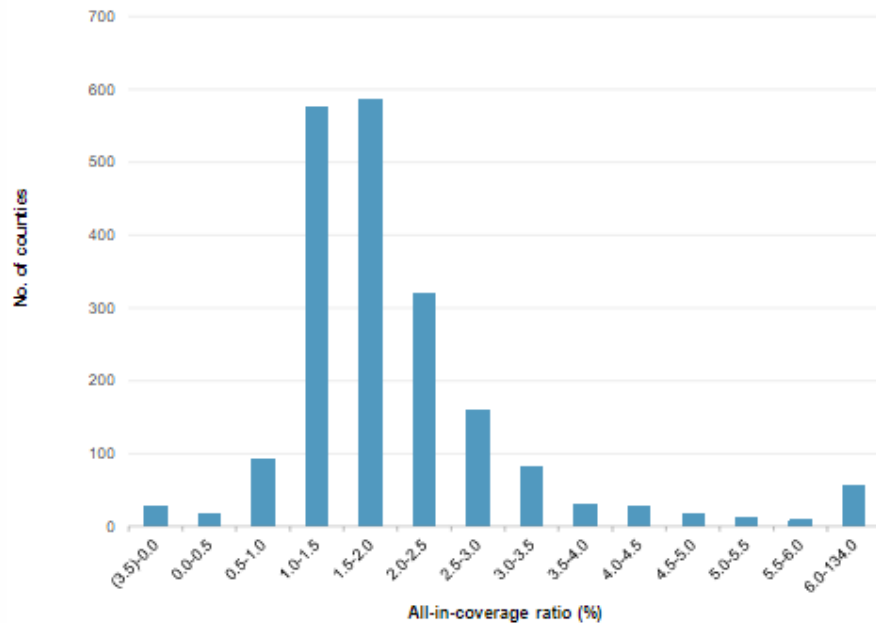
Space, The Next Frontier:
Spatial Finance And
Environmental Sustainability

Space, The Next Frontier: Spatial Finance And Environmental Sustainability

New Way to Look at Debt Service Coverage

Traditional: Bar Chart

Distribution Of All-in-Coverage Ratios



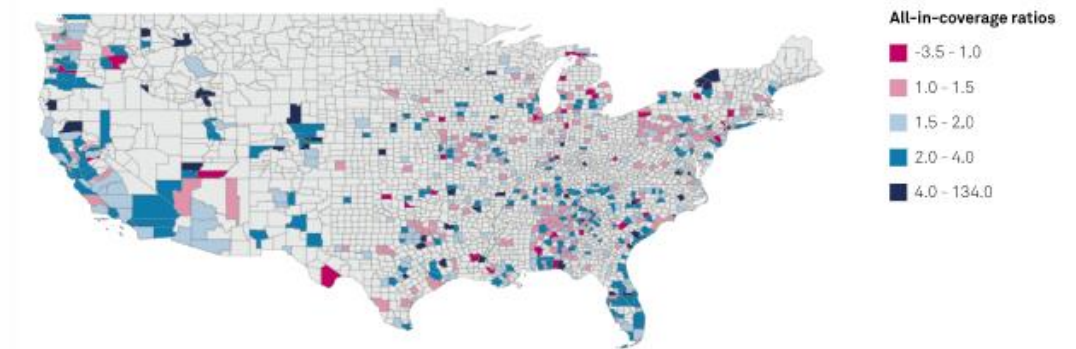
Source: S&P Global Ratings.

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New: Using Geospatial Data

Figure 1

All-In-Coverage Ratios Of U.S. Counties' Water Utilities



Source: S&P Global Ratings.

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Resources

Legislative & Regulatory

California [SB 598](#)

Florida [Open Financial Statements Act](#)

Illinois [HR0703](#)

GREAT Act (grant reporting) [Summary from the Data Coalition](#)

Open Data Act (federal agencies) [Summary from the Data Coalition](#)

Financial Transparency Act (federal agencies including MSRB) [HR 4476](#)

SEC Database of Corporate Filings in XBRL [DERA Financial Statement and Notes Data Set](#)

Demos and Articles

CAFR Demonstration [Taxonomy](#)

Digital CAFR Demo Example – [San Diego County](#)

Digital CAFR Demo Example – [McHenry County](#)

Digital CAFRs: Will County IL [Will County Auditor](#)

[Forbes; The Four Letters Transforming the Municipal Market](#)

[Can Standardized Financial Data Help the Government Save Money?](#)

[Should AI or Blockchain Replace XBRL?](#)

[Sunlight Foundation: Leading the Way To Local Government Fiscal Transparency](#)

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