

Matrix Balancing Scenarios

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Table of Scenarios

Iterations and balancing	Matrix structure (rows, columns, items):		
<p>Sums by rows and sums by columns:</p>	<p>Rows defined by values in group row field.</p>	<p>Columns defined by values in group column field. <i>Starting matrix item is aggregated field1 value for row/column group.</i></p>	<p>Columns selected from the list of data columns. <i>Starting matrix item is the value of the row/column item.</i></p>
<p>Balance to sums by rows and sums by columns entered manually.</p>	<p>1a, 1b, 2a, 2b, 2c, 3a, 3b, 3c</p>	<p><u>Scenario 1a</u> Params: Prg, Pcg, Fld1, Agf1, Msr, Msc</p>	<p><u>Scenario 1b</u> Params: Prg, Mcs, Msr, Msc</p>
<p>Balance to sums by rows and sums by columns of the target matrix. <i>Target matrix item is aggregated field2 value for row/column group.</i></p>	<p>1a, 1b, 2a, 2b, 2c, 3a, 3b, 3c</p>	<p><u>Scenario 2a</u> Params: Prg, Pcg, Fld1, Agf1, Fld2, Agf2</p>	<p>n/a</p>
<p>Multiple 2a scenarios to get balancing coefficients for each selected field from the list of columns. Balance to sums by rows and sums by columns for target matrices. <i>Target matrix item is aggregated selected field value for row/column group.</i></p>	<p>1a, 1b, 2a, 2b, 2c, 3a, 3b, 3c</p>	<p><u>Scenario 3a</u> Params: Prg, Pcg, Fld1, Agf1, Mcs, AgMc</p>	<p>n/a</p>
<p><i>Field2 starting and target values</i> used as condition on data to get starting and target matrices. Balance to sums by rows and sums by columns for target matrix.</p>	<p>1a, 1b, 2a, 2b, 2c, 3a, 3b, 3c</p>	<p><u>Scenario 2b</u> Params: Prg, Pcg, Fld1, Agf1, Fld2, Sfld2, Tfld2</p>	<p><u>Scenario 3b</u> Params: Prg, Mcs, Fld2, Sfld2, Tfld2</p>
<p>Multiple scenarios of the scenario in the row above (2b or 3b) to get balancing coefficients (2c or 3c). <i>Field2 starting value</i> used as condition on data to get starting matrix and set of target matrices defined by each <i>value between starting and target values of field2.</i></p>	<p>1a, 1b, 2a, 2b, 2c, 3a, 3b, 3c</p>	<p><u>Scenario 2c</u> Params: Prg, Pcg, Fld1, Agf1, Fld2, Sfld2, Tfld2</p>	<p><u>Scenario 3c</u> Params: Prg, Mcs, Fld2, Sfld2, Tfld2</p>

Introduction

Balancing the given matrix to given sums by rows and sums by columns using the number of iterations that described as proportional matrix rows adjustments to required sums and then proportional columns adjustments to required sums, resulted in matrix that maximized the entropy function of “usefulness”, and this process get us the final balancing coefficients to multiply rows of starting matrix and the final balancing coefficients to multiply columns of starting matrix to receive the items of balancing matrix. Balancing matrix algorithm shows what most probable evolution of starting matrix will be for the given restrictions for sums by rows and sums by columns. Balancing matrix shows the values for cells that supposed to be reached as macro economical point of balance for target sums of rows and sums of columns.

There are eight scenarios of the balancing mechanism supported by <http://OUReports.com> .

Scenarios of balancing matrix to the sums by rows and sums by columns differ by the way of getting the starting matrix from original data and by the way of getting the target sums by rows and sums by columns: 1a, 1b, 2a, 2b, 2c, 3a, 3b, 3c.

Parameters: Prg, Pcg, Fld1, Agf1, Msr, Msc, Fld2, Agf2, Sfld2, Tfld2, Mcs, AgMc:

Prg - the group field for matrix rows

Pcg - the group field for matrix columns

Fld1 - the data field

Agf1 - the aggregation function for field1 values

Msr - manually entered sums by rows

Msc - manually entered sums by columns

Fld2 - the data field

Agf2 - the aggregation function for field2 values

Sfld2 - the starting value of field2

Tfld2 - the target value of field2

Mcs - multiple matrix columns

AgMc - the aggregation function for multiple matrix columns values

Scenarios:

1a: Starting Matrix of aggregated field1 values to balance by manually entered sums by rows and sums by columns.

Scenario Parameters: Prg, Pcg, Fld1, Agf1, Msr, Msc - both group fields (for rows and columns), the field1, aggregation function for field1, and manually entered sums by rows and by columns.

Starting matrix cell defined by value of the row group field and value of the column group field, and value in the cell defined by field1 values aggregated for all records where row field value and column field value are defined by this cell.

Sample: data has field "Area" and field "Industry", field1 has values of grant applications in dollars, the aggregation function is "Sum". Macro economical desirable values for Areas and Industries entered. Balancing matrix cell shows amount for each Area and Industry that is the macro economical point of balance satisfying macro economical requirements for Areas and Industries.

See more samples and details in [1a Scenario](#).

1b: Starting Matrix of rows and selected columns to balance by manually entered sums by rows and sums by columns.

Parameters: Prg, Mcs, Msc, Msr - the group field for rows, multiple matrix columns, and manually entered sums by rows and by columns.

Starting matrix cell defined by value of the row group field value and the column name, and value in the cell defined by value of the column in the row.

Sample: data has field "Area" and separate fields for each Industry, cell has values of grant applications in dollars for Area and Industry. Macro economical desirable values for Areas and Industries entered. Balancing matrix cell shows amount for each Area and Industry that is the macro economical point of balance satisfying macro economical requirements for Areas and Industries.

See more samples and details in [1b Scenario](#).

2a: Starting Matrix of the aggregated field1 to balance for sums of rows and columns of the Target Matrix of the aggregated field2.

Parameters: Prg, Pcg, Fld1, Agf1, Fld2, Agf2 - both group fields for rows and columns, field1, aggregation function for field1, field2, aggregation function for field2.

Starting and target matrix cell defined by value of the row group field and value of the column group field. The value in the cell of starting matrix defined by field1 values aggregated for all records where row field value and column field value are defined by this cell. The value in the cell of target matrix defined by field2 values aggregated for all records where row field value and column field value are defined by this cell.

Sample: data has field "Area" and field "Industry", field1 has values of Gross Domestic Product in dollars in 2010, the aggregation function is "Sum", field2 has values of Gross Domestic Product in dollars in 2020, the aggregation function is "Sum". Desirable sums for Areas and Industries calculated based on target matrix. Balancing matrix cell shows amount for each Area and Industry that is the macro economical point of balance satisfying macro economical requirements for Areas and Industries based on 2020. Comparison of starting, target, and especially to the balancing matrix gives to analytics the information where process developed out of natural economical point of balance.

See more samples and details in [2a Scenario](#).

2b: The starting value of field2 to get the Starting matrix of field1 values and target value of field2 to get the Target matrix of field1 values. Balance starting matrix to sums of rows and columns of the target matrix.

Parameters: Prg, Pcg, Fld1, Agf1, Fld2, Sfld2, Tfld2 - both group fields for rows and columns, field1, aggregation function for field1, and field2 with starting and target values.

Sample: data has field "Area" and field "Industry", field1 has values of Gross Domestic Product in dollars, the aggregation function is "Sum", field2 has years from 2010 to 2020. Starting field2 value 2010 used as restriction to get the aggregated field1 values for starting matrix and target value 2020 of field2 used to get the aggregated field1 values for target matrix. Desirable sums for Areas and Industries calculated based on target matrix. Balancing matrix cell shows amount for each Area and Industry that is the macro economical point of balance satisfying macro economical requirements for Areas and Industries based on 2020. Comparison of starting, target, and especially to the balancing matrix gives to analytics the information where process developed out of natural economical point of balance.

See more samples and details in [2b Scenario](#).

2c: Get balancing coefficients for Starting Matrix of field1 for all iterations between starting and target values of the field2. Multiple 2b scenarios.

Parameters: Prg, Pcg, Fld1, Agf1, Fld2, Sfld2, Tfld2 - both group fields for rows and columns, field1, aggregation function for field1, and field2 with starting and target values.

Sample: data has field "Area" and field "Industry", field1 has values of Gross Domestic Product in dollars, the aggregation function is "Sum", field2 has years from 2010 to 2020. Starting field2 value 2010 used as restriction to get the aggregated field1 values for starting matrix. The scenario 2b repeated for each value of the field2 up to 2020 which used to get the aggregated field1 values for each target matrix. Desirable sums for Areas and Industries calculated based on target matrix. Balancing matrix cell shows amount for each Area and Industry that is the macro economical point of balance satisfying macro economical requirements for Areas and Industries based on sums of rows and sums of columns in target matrix. Balancing coefficients shows weights of Areas and Industries in each iteration by year. The link in the starting matrix cell opens the chart of balancing matrix values by years.

See more samples and details in [2c Scenario](#).

3a: Get balancing coefficients for Starting Matrix of aggregated values of field1 and multiple Target Matrices of aggregated selected fields values. Multiple 2a scenarios.

Parameters: Prg, Pcg, Fld1, Agf1, Mcs, AgMc - both group fields for rows and columns, field1, aggregation function for field1, and multiple matrix columns, aggregation function for selected matrix columns.

Starting matrix of aggregated field1 values, and target matrices of each aggregated selected field values for the same groups.

Sample: data has field "Area" and field "Industry", field1 has values of Gross Domestic Product in dollars, the aggregation function is "Sum" for year 2010 (used for calculating the starting matrix), and separate fields have values of Gross Domestic Product in dollars for each year up to 2020 (used for calculating each target matrix for each year with aggregation function "Sum"). The scenario 2a repeated for each value of the fields up to 2020 which used to get the values for each target matrix. Desirable sums for Areas and Industries calculated based on target matrix. Balancing matrix cell shows amount for each Area and Industry that is the macro economical point of balance satisfying macro economical requirements for Areas and Industries based on sums of rows and sums of columns in target matrix. Balancing coefficients shows weights of Areas and Industries in each iteration by year. The link in the starting matrix cell opens the chart of balancing matrix values by years.

See more samples and details in [3a Scenario](#).

3b: Starting Matrix rows and selected multiple columns to balance from starting to target values of the field2.

Parameters: Prg, Mcs, Fld2, Sfld2, Tfld2 - group field for rows, selected multiple fields for columns of the matrix, and field2 with starting and target values.

Sample: data has field "Area" and separate fields for each Industry, field2 has years from 2010 to 2020, each cell has values of Gross Domestic Product in dollars for Area and Industry in the particular year. Starting field2 value 2010 used as restriction to get the values for starting matrix and target value 2020 of field2 used to get the values for target matrix. Desirable sums for Areas and Industries calculated based on target matrix. Balancing matrix cell shows amount for each Area and Industry that is the macro economical point of balance satisfying macro economical requirements for Areas and Industries based on 2020. Comparison of starting, target, and especially to the balancing matrix gives to analytics the information where process developed out of natural economical point of balance.

See more samples and details in [3b Scenario](#).

3c: Get balancing coefficients for Starting Matrix rows and selected multiple columns for all iterations between starting and target of the field2 values. Multiple 3b scenarios.

Parameters: Prg, Mcs, Fld2, Sfld2, Tfld2 - group field for rows, selected multiple fields for columns of the matrix, and field2 with starting and target values.

Sample: data has field "Area" and separate fields for each Industry, field2 has years from 2010 to 2020, each cell has values of Gross Domestic Product in dollars for Area and Industry in the particular year. Starting field2 value 2010 used as restriction to get the values for starting matrix and each value of the field2 up to 2020 used to get the values for each target matrix. The scenario 3b repeated for each value of the field2 up to 2020 which used to get the values for each target matrix. Desirable sums for Areas and Industries calculated based on each target matrix. Balancing matrix cell shows amount for each Area

and Industry that is the macro economical point of balance satisfying macro economical requirements for Areas and Industries based on sums of rows and sums of columns in target matrix. Balancing coefficients shows weights of Areas and Industries in each iteration by year. The link in the starting matrix cell opens the chart of balancing matrix values by years.

See more samples and details in [3c Scenario](#).

Samples of the different data structure and scenarios:

Sample reports can be open from <http://OUReports.com> by clicking buttons "Try It! Play" in our Sandbox or with our Analytics.

1a Scenario samples:

Report: Sample Sales Records by year in our Analytics from <http://OUReports.com>

Data:

The screenshot displays the 'Online User Reporting' interface. At the top, there's a navigation menu with options like 'Log Off', 'List of Reports', 'Report Definition', and 'Report Data Definition'. Below this, a search bar and a 'Reset' button are visible. The main content area is titled 'Data for report: Sample Sales Records by year'. It shows a table with 100 records returned. The table has the following columns: OrderYear, Region, Country, Item Type, Sales Channel, Order Priority, Name, Order Date, Order ID, Ship Date, Units Sold, Unit Price, Unit Cost, Total Revenue, Total Cost, and Total Profit. The data includes various regions like Australia and Oceania, Central America and the Caribbean, Europe, Sub-Saharan Africa, and Asia, with different item types such as Baby Food, Office Supplies, Fruits, Household, Personal Care, Cereals, Vegetables, Clothes, and Beverages. At the bottom of the table, there's a note: 'Last imported from the file SampleSalesRecordsYear.csv on 7/18/2022 11:08:40 AM'.

Parameters with manually entered target proportional values:

Advanced Analytics | oureports.net/OUReports/AdvancedAnalytics.aspx

Online User Reporting

Recalculate Analytics | Correlation | Data and Statistics | Report and Charts | List of User Dashboards | Analytics | Matrix Balancing Help | OUReports

Log Off | List of Reports | Report Definition | Report Data Definition | Explore Report Data | Show Report | Show Generic Report | Show Report Graphs | Export Report to Excel | Export Report to Word | Export Report to PDF | See Crystal Report | Show Analytics | See Data Overall Statistics | See Groups Statistics | Export Statistics to Excel | See Fields Correlation | Matrix Balancing

Sample Sales Records by year - Advanced Analytics - Matrix Balancing

Select Scenario: 1a: Starting Matrix of aggregated field1 values to balance by manually entered sums by rows and sums by columns

100 Precision: 1 Partial rows/columns: 0,0 adjust by start matrix

1a: Starting Matrix of aggregated field1 values to balance by manually entered sums by rows and sums by columns

Enter:

Matrix rows by: **ItemType** columns by: **Region**

Matrix items by field1: **TotalProfit** aggregation function: **Sum**

Enter sums by rows: 11.22,33.44,11.22,33.44,55.66,77.88

Enter sums by columns: 11.22,33.44,55.66,77

(1a) Balancing matrix of field1 for given above sums by rows and by columns

Arrays of sums by rows and columns should have the same dimensions as Matrix (12,7).

Starting Matrix of Sum of TotalProfit	Export to Excel	⇒	Target Matrix	Export to Excel
Balancing coefficients	Export to Excel		Balancing Matrix	Export to Excel

Starting, Target sums adjusted to starting overall total, and Balancing Matrix:

Advanced Analytics | Google Charts | oureports.net/OUReports/AdvancedAnalytics.aspx

Balancing for sum of rows and columns of the starting matrix for sum values of field1 'TotalProfit':
Balancing, precision: 0.93344, steps: 241

Item Type	Sum of Sum of TotalProfit by Item Type	Asia	Australia and Oceania	Central America and the Caribbean	Europe	Middle East and North Africa	North America	Sub-Saharan Africa
Baby Food	3886644	1236498	0	0	2117260	0	0	532886
Beverages	888047.32	0	293597	127723	153217.41	0	0	313199.91
Cereal	2294443.63	0	86818.34	244346	0	365854	0	1623877.63
Clothes	563332.75	1642334	727423	403773	955416	1028160	0	1166226.75
Cosmetics	14556046	1208740	1678540	296448	5233492	4105940	0	2032886
Fruits	120495.26	15103.5	18279.67	0	487269	11999.39	0	75112.5
Household	741266.88	2622916	0	0	34675.88	0	1152490	1978165
Meat	616100	0	337938	0	0	0	0	272672
Office Supplies	592580	1479307	369155	0	1774188	255151	0	2051689
Personal Care	1226621.79	32819	0	160610	133995.38	0	365456	497841.41
Snacks	751844	0	0	0	0	0	0	629250
Vegetables	1265819.33	243429.13	0	0	10795.2	0	0	1011595
Total: Sum of Sum of TotalProfit by Region:	44168190.36	7350336.63	3485661.27	2846906	11082939.87	5761191.39	1457946	12183209.2

Item Type	Sum of Sum of TotalProfit by Item Type	Asia	Australia and Oceania	Central America and the Caribbean	Europe	Middle East and North Africa	North America	Sub-Saharan Africa
Baby Food	960178.03	0	0	0	0	0	0	1827.69
Beverages	1520356.15	0	0	0	0	0	0	26592.99
Cereal	280534.15	0	0	0	0	0	0	189625.64
Baby Food	960178.03	0	0	0	0	0	0	1827.69
Beverages	1520356.15	0	0	0	0	0	0	26592.99
Cereal	280534.15	0	0	0	0	0	0	189625.64
Clothes	3840712.21	0	0	0	0	0	0	345201.04
Cosmetics	960178.03	0	0	0	0	0	0	103145.84
Fruits	120495.26	0	0	0	0	0	0	11169.48
Household	280534.15	0	0	0	0	0	0	288144.08
Meat	3840712.21	0	0	0	0	0	0	1177632.78
Office Supplies	4800890.26	0	0	0	0	0	0	346322.03
Personal Care	5761068.31	0	0	0	0	0	0	2281936.18
Snacks	6721246.36	0	0	0	0	0	0	5675910.71
Vegetables	7681424.41	0	0	0	0	0	0	1177632.78
Total: Sum of Sum of TotalProfit by Region:	44168190.36	1577435.37	3154870.74	4732306.11	6309741.48	7887176.85	9466412.22	11042047.5

Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10	k11	k12	k13	k14	k15	k16	k17	Precision
1	0.247052	1.6245	1.25653	0.73389	0.65966	1.93719	0.3086	6.28996	0.80965	4.71978	0.93849	6.06834	0.28005	0.77479	1.41621	1.47511	4.20536	0.0094
2	1.04048	1.1387	0.8546	0.68927	0.59431	1.5817	1.10236	0.5481	1.59213	2.23539	0.81564	0.78387	0.99284	1.16991	1.25429	1.71129	0.69121	1.23688
3	0.94418	1.0903	0.95222	0.89442	0.89781	0.91892	0.73402	1.32759	0.9751	0.6937	1.24637	1.39132	0.87615	0.82444	0.94759	0.95935	1.06761	1.43265
4	0.96621	0.9743	0.99671	0.97240	0.96291	0.92742	0.78061	1.21847	0.99007	0.74761	1.14433	1.20192	0.90953	0.86170	0.94905	1.02162	1.01081	1.32049
5	0.99663	1.0543	1.01946	1.04477	0.99359	1.03455	0.89041	1.5551	1.00717	0.78731	1.09823	1.12683	0.93063	0.89074	0.95380	0.99870	1.07079	1.29545
6	1.00684	1.04816	1.02913	1.02021	1.01347	1.03809	0.82444	1.11593	1.01835	0.81413	1.07308	1.0897	0.94341	0.91232	0.96420	0.96750	0.97581	1.2211
7	1.01662	1.0182	1.0336	1.02780	1.02871	1.03935	0.84571	1.0899	1.02486	0.833	1.05805	1.06894	0.95104	0.92615	0.96580	0.96060	0.97031	1.9491
8	1.02261	1.0344	1.0354	1.03157	1.02888	1.03931	0.86171	1.0723	1.02837	0.84761	1.04954	1.05633	0.95750	0.93669	0.9666	0.97870	0.96784	1.97599
9	1.02544	1.0365	1.03676	1.03321	1.03161	1.03853	0.86527	1.06015	1.03009	0.85858	1.04226	1.04819	0.96149	0.94811	0.96877	0.97467	0.96661	1.6179
10	1.02716	1.03417	1.03536	1.03349	1.03232	1.0374	0.87256	1.0516	1.03074	0.86722	1.03798	1.04266	0.96430	0.96429	0.97035	0.97359	0.96697	1.50811
11	1.02791	1.0326	1.03450	1.03222	1.03212	1.0314	0.87308	1.04549	1.03078	0.87416	1.03497	1.03876	0.96540	0.96860	0.97152	0.97320	0.96744	1.4212
12	1.02817	1.03142	1.03363	1.03261	1.03207	1.03482	0.88336	1.04103	1.03049	0.8798	1.03279	1.03991	0.96822	0.96220	0.9724	0.97301	0.96841	1.3511
13	1.02814	1.03039	1.03265	1.03188	1.0315	1.03358	0.88421	1.03772	1.03002	0.88447	1.03117	1.03377	0.96953	0.96489	0.97380	0.97310	0.96882	1.2939
14	1.02793	1.02952	1.03169	1.03091	1.03082	1.03244	0.89051	1.03521	1.02949	0.88835	1.02993	1.03212	0.9706	0.9669	0.97361	0.97310	0.96972	1.2465
15	1.02764	1.02878	1.03079	1.02932	1.02912	1.0314	0.89371	1.03328	1.02894	0.89162	1.02997	1.03083	0.97146	0.96490	0.97405	0.97357	0.97048	1.2069
16	1.02734	1.02815	1.02997	1.02899	1.02845	1.03048	0.89618	1.03176	1.02841	0.89439	1.0282	1.02979	0.97210	0.96970	0.9744	0.97385	0.97191	1.1734
17	1.02699	1.0276	1.02924	1.02893	1.02882	1.02966	0.89828	1.03055	1.0279	0.89675	1.02758	1.02894	0.97279	0.97070	0.9747	0.97413	0.97184	1.1451
18	1.02667	1.02713	1.02858	1.02833	1.02825	1.02894	0.9001	1.02967	1.02745	0.89878	1.02707	1.02823	0.9733	0.97162	0.97496	0.9744	0.97242	1.1208
19	1.02636	1.02671	1.02801	1.0278	1.02773	1.02831	0.90161	1.02876	1.02703	0.90052	1.02664	1.02764	0.97340	0.97132	0.97517	0.97465	0.97293	1.11
20	1.02605	1.0264	1.02761	1.0274	1.0273	1.0278	0.90311	1.0283	1.0263	0.90201	1.0264	1.0274	0.97340	0.97132	0.97517	0.97465	0.97293	1.11

Report: Gross Domestic Product GDP by Area in our Analytics from <http://OUReports.com>

Data:

Interactive Reporting | Advanced Analytics | oureports.net/OUReports/ShowReport.aspx?r3rd=0

Online User Reporting

Data for report: Gross Domestic Product GDP by Area

Records returned: 152

GeoName	GeoName	LineCode	Description	col2010Q1	col2010Q2	col2010Q3	col2010Q4	col2011Q1	col2011Q2	col2011Q3	col2011Q4	col2012Q1	col2012Q2	col2012Q3	col2012Q4	col2013Q1	col2013Q2	col2013Q3	col2013Q4	col2014Q1	col2014Q2	col2014Q3	col2014Q4	col2015	
91000	New England	3	Agriculture, forestry, fishing and hunting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
91000	New England	6	Mining, quarrying and oil and gas extraction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
91000	New England	10	Utilities	13726.9	14476.1	14137	13778.6	12923.4	14077.3	13806.9	13935.5	14012.8	13973.2	13521.8	13669.5	14661.5	14338.2	14658.6	14484.1	14584	14583.1	15408.2	16377.6	14923.5	
91000	New England	11	Construction	25456.4	25936	25795	25424.7	24915.4	25752.5	25942.1	27015.7	27410.2	27343.8	27385.8	27567.7	27793.9	28118.2	28524.3	28547.8	28457.7	29120.4	29887	30358.3	30415.3	
91000	New England	12	Manufacturing	91090.6	93490.1	96404.9	94579.7	91836.7	95324.2	91600.9	95373.2	93850.4	96243.1	96057.8	96220.2	96189.9	96365.3	97529.3	98746.6	94033.6	96168.3	99328.2	102621	102288	
91000	New England	34	Wholesale trade	45803.7	46872.7	48120.3	47623	47397.3	48419.9	48403.5	49779.4	48926.6	50927.9	50844.2	50723.9	51990.1	51441.2	52071	52875.4	51194.8	52680.1	53872.5	54386.6	54689.9	
91000	New England	35	Retail trade	43570.8	44053.5	43877.8	44144.1	43774.2	43825.8	44942.5	44893.6	44931.9	45197.9	45462.2	46164.3	45956.1	46242.7	46460.9	45955.9	46344.5	46872.5	47907.1	47104		
91000	New England	36	Transportation and warehousing	13022.4	13437.2	13674.3	13818.1	13849.5	14236.1	14209.1	14354.9	14317.2	14352.9	14419.6	14531	14481.1	14586.5	14914.4	15213.5	15364.2	15723.2	16127.8	16124.7	17645.3	
91000	New England	45	Information	39913.4	41215.6	42537.8	42415.5	41382.4	42590.7	41265.9	41559.1	39959.3	40621.5	40687.3	40932.4	43005.5	44043.2	44440.9	43276.4	43763.8	44378.6	43308.3	44106	47052.7	
91000	New England	51	Finance and insurance	83245.4	80103.6	76347	77046.9	72682.8	76040	79796.2	80824.8	84089.3	88601.6	90377.8	90295	82130.8	82279.9	82976.8	85520.3	84630.6	88264.2	89788.9	95812	100048	
91000	New England	56	Real estate and rental and leasing	122224	124048	125018	126763	126302	129231	130264	132881	130830	131408	132101	130360	131535	130526	133231	132928	132506	133361	135457	135332	136336	
91000	New England	60	Professional, scientific, and technical services	70412.1	72083.8	74210.3	75061.6	74096.4	75656.8	76135.9	76966.2	79872.6	80871	81049.1	79188.1	80221.4	80450.9	81092.6	82392.7	81880.2	83211.6	86975.6	88209.3	88158.5	
91000	New England	64	Management of companies and enterprises	16162.2	16510.7	17474.2	17775.7	17193.9	21360.5	17679.9	18187.6	19441.1	19150.4	20148	22372.2	21377.2	20375.5	20749.3	21716.8	22434.8	21659.7	21640.1	22407.6	24236.9	
91000	New England	65	Administrative and support and waste management and remediation services	21163	21726.2	22076.7	22250.8	22281	22364.8	22564.3	22729.7	23675.9	23546.6	23616.2	23610.6	23916.4	24117.9	24552	24695	24661	25489.2	25851.7	26249	26418.5	
91000	New England	69	Educational services	22268	22829.6	23110.4	23193	23326.6	23546.5	23751	23922.2	24092.3	24514.5	24470.4	24536.9	24645.6	24926.4	25047.5	25328.1	25145.7	25690.1	25971.4	26403.9	26339.4	
91000	New England	70	Health care and social assistance	75289	76828.6	79031.2	77461.8	78914.3	78959.7	78847.9	80382.9	82599.9	82500.5	82672.6	83489.5	84749.8	84455.4	84704.3	85181.2	84635.3	86515.1	87552.9	89599.9	88149.1	
91000	New	76	Arts, entertainment, and recreation	7864.3	8306.5	8137.7	8177.4	8016.6	8616.6	8664.6	8133.6	8836.7	8610.6	8688.8	8134.6	8648.8	8666.8	8746.8	8601.9	8678.9	8686.4	8106.3	8116.3	8136.4	

Parameters (target sums adjusted for total value in starting matrix):

Advanced Analytics | Google Charts | oureports.net/OUReports/AdvancedAnalytics.aspx

Gross Domestic Product GDP by Area - Advanced Analytics - Matrix Balancing

Select Scenario: 1a: Starting Matrix of aggregated field values to balance by manually entered sums by rows and sums by columns

Enter: Starting Matrix of aggregated field values to balance by manually entered sums by rows and sums by columns

Matrix rows by: GeoName | columns by: Description

Matrix items by field: col2021Q1 | aggregation function: Sum

Enter sums by rows: 11 22 33 44 55 66 77 88 99

Enter sums by columns: 11 22 33 44 55 66 77 88 99 10 11 22 33 44 55 66 77 88 99 100

(1a) Balancing matrix of field1 for given above sums by rows and by columns

Balancing for sum of rows and columns of the starting matrix for sum values of field1 'col2021Q1': yes, balanced, precision: 0.30315, steps: 5

GeoName	Sum of Sum of col2021Q1 by GeoName	Accommodation and food services	Administrative and support and waste management and remediation services	Agriculture, forestry, fishing and hunting	Arts, entertainment, and recreation	Construction	Educational services	Finance and insurance	Health care and social assistance	Information	Management of companies and enterprises	Manufacturing	Mining, quarrying, and oil and gas extraction	Other services (except government and technical services)	Professional, scientific, and technical services	Real estate and rental and leasing	Retail trade	Transportation and warehousing	Utilities	Wholesale trade	Total	
Far West	3982092.1	134008	137605	55762.3	37515	186129	38011	224625	286645	452972	70307.8	446992	19918.7	73380.2	374099	758952	274690	120357	60827.1	1229296		Far West
Great Lakes	2628446.7	66607.8	94079.7	31735.8	19637.2	115290	29957.6	264921	239092	85344.7	66757.2	496785	15811.5	59724	190428	344409	175431	87739.7	53089.5	192406		Great Lakes
Mideast	3398738.5	71737.4	112283	0	28509.8	138263	72500.6	515889	311068	275228	82919.2	258666	0	79997.2	360337	544388	191878	88931.5	61788.8	198954		Mideast
New England	1042737.3	31440.9	34789.1	0	7366.6	42040.1	29307.2	125912	105594	59535.8	26247.2	115181	0	20559.3	121080	165689	16426.6	18677.4	18785.5	59125.6		New England
Plains	1230298.4	30009.5	36713.3	82594.7	8524.3	55597.2	12479.7	135903	116928	44666.8	36065.1	187223	11910	27292.2	78275.6	151441	82819.6	44839.1	25515.3	91701		Plains
Rocky Mountain	1084222.5	23384.2	25188	11344.7	7038.4	58020.3	7859.6	52444.6	51652.1	41239.2	13611.6	67401.2	22563.4	16901	64557.5	115977	52670.4	27428.9	11798.4	44542		Rocky Mountain
Southeast	4099881.8	139972	173556	35036	35756.5	220772	44046.5	315740	354523	176141	90981.9	565942	27767.5	100348	330156	630143	315782	145052	90065.4	295301		Southeast
Southwest	2267706.8	71898.2	97206.9	14464.1	13289.1	131506	19889.6	170006	174663	92266.9	34771.8	305766	143151	49284.8	185567	280489	160224	87246.4	46625	180412		Southwest
Total: 19358324.1	Sum of Sum of col2021Q1 by Description:	573458	711421	201737.6	157836.9	940417.6	254031.8	1805440.6	1640165.1	1227194.4	421661.8	2443956.2	241122.1	427486.7	1712500.1	3000468	1314921.6	620272	368495	1295737.6		Total

Balancing coefficients

Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10	k11	k12	k13	k14	k15	k16	k17	k18	k19								
1	0.121530	0.69250	0.42718	0.85649	0.2602	0.782040	0.94341	0.20727	0.334120	0.41442	0.267465	0.182390	0.84194	0.7297	0.770330	0.96051	0.83040	0.464930	0.19564	0.315771	0.784616	0.691910	0.415321	0.015022	0.363871	0.633621	0.31354
2	0.992471	0.067660	0.966331	0.0196	0.983830	0.972931	0.022821	0.00595	0.9987	0.997641	0.007011	0.006671	0.000771	1.000830	0.998761	0.003250	0.999510	0.995691	0.001720	0.9995	1.000021	0.000070	0.999800	0.9999	0.997990	0.99832	
3	0.999571	0.000230	0.999961	0.000150	0.999680	0.999811	0.000211	0.00012	0.999999	0.999990	0.000151	0.000011	0.000011	0.999981	0.999991	0.000021	0.000010	0.999990	0.999990	0.999991	0.999991	0.999991	0.999991	0.999991	0.999991	0.999991	
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Result:	0.120570	0.393210	0.41278	0.87899	0.232126	0.96609	0.193238	0.333680	0.54026	0.28374	0.518592	0.94222	0.472980	0.7097	0.94887	0.183690	0.4647	0.158951	0.31881	0.78355	0.587190	0.415341	0.013982	0.36364	0.62412	0.13132	

Report: Personal Income by Area in our Analytics from <http://OUReports.com>

Data:

Interactive Reporting | Google Charts | Advanced Analytics

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Data for report: Personal Income by Area

Search: | Search

Records returned: 24

GeoFlag	GeoName	LineCode	Description	col1990Q1	col1990Q2	col1990Q3	col1990Q4	col1991Q1	col1991Q2	col1991Q3	col1991Q4	col1992Q1	col1992Q2	col1992Q3	col1992Q4	col1993Q1	col1993Q2	col1993Q3	col1993Q4	col1994Q1	col1994Q2	col1994Q3	col1994Q4	col1995Q1
91000	New England	1	Personal income (millions of dollars, seasonally adjusted)	296597	301918	303877	302547	302559	305553	306753	310515	318228	323080	324736	329470	329532	334025	338654	340958	343623	348566	350821	357910	362243
91000	New England	2	Population (midperiod, persons) 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
91000	New England	3	Per capita personal income (dollars) 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
92000	Midwest	1	Personal income (millions of dollars, seasonally adjusted)	981365	996907	1008220	1007340	1001660	1014790	1022310	1031950	1056120	1069630	1082980	1102050	1099490	1109810	1119760	1133770	1124680	1148360	1157320	1178520	1193880
92000	Midwest	2	Population (midperiod, persons) 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
92000	Midwest	3	Per capita personal income (dollars) 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
93000	Great Lakes	1	Personal income (millions of dollars, seasonally adjusted)	794032	808459	817959	820956	815562	824116	834391	848893	866138	887837	896900	912850	910919	927169	935067	950796	964375	980042	994152	1012970	1027180
93000	Great Lakes	2	Population (midperiod, persons) 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
93000	Great Lakes	3	Per capita personal income (dollars) 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
94000	Plains	1	Personal income (millions of dollars, seasonally adjusted)	318760	324512	328323	329119	329653	334035	338088	342510	352877	358652	362992	367206	366122	371329	373456	379262	388874	395496	399967	406844	409918
94000	Plains	2	Population (midperiod, persons) 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Parameters (target sums adjusted for total value in starting matrix):

Advanced Analytics | Google Charts | Advanced Analytics

oureports.net/OUReports/AdvancedAnalytics.aspx

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PERSONAL INCOME BY AREA - ADVANCED ANALYTICS - MATRIX BALANCING

Select Scenario: Starting Matrix of aggregated field1 values to balance by manually entered sums by rows and sums by columns | Steps: 000 | Precision: 1 | Partial rows/columns: 0,0 | adjust by start matrix

Enter: Matrix rows by: GeoName | columns by: Description

Matrix items by field1: col2010Q1 | aggregation function: Sum

Enter sums by rows: 11.22 33.44 55.66 77.88

Enter sums by columns: 33.44 55

(1a) Balancing matrix of field1 for given above sums by rows and by columns

Balancing for sum of rows and columns of the starting matrix for sum values of field1 'col2010Q1':
yes, balanced, precision: 0.5258, steps: 9

Starting Matrix of Sum of col2010Q1					Target Matrix of proportional to requested sums by rows and columns of col2010Q1				
GeoName	Sum of Sum of col2010Q1 by GeoName	Per capita personal income (dollars) 2/	Personal income (millions of dollars, seasonally adjusted)	Population (midperiod, persons) 1/	GeoName	Sum of Sum of col2010Q1 by GeoName	Per capita personal income (dollars) 2/	Personal income (millions of dollars, seasonally adjusted)	Population (midperiod, persons) 1/
Far West	54754669	81948	2233160	62939560	Far West	11			
Great Lakes	48178366	37116	1722850	46418400	Great Lakes	22			
Midwest	50423591	46921	2257750	48118800	Midwest	33			
New England	15228252	91032	739020	14443300	New England	44			
Plains	21322654	38756	794958	20489800	Plains	55			
Rocky Mountain	11328395	36383	356412	10895600	Rocky Mountain	66			
Southeast	81147114	35818	2804800	78306496	Southeast	77			
Southwest	38664365	38175	1348590	37279600	Southwest	88			
Total:	Sum of Sum of col2010Q1 by Description:	324150	12264610	308468496	Total: 132	Sum of Sum of col2010Q1 by Description:	33	44	55

Balancing coefficients										
Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10
1	0.16285	0.37022	0.5368	0.34285	0.99126	4.72349	0.78921	1.84527	156.69722	6.84436
2	1.12138	1.16751	1.04634	0.71294	0.96967	0.81389	0.26842	1.14613	1.09702	0.97821
3	1.01165	1.01112	1.00905	0.98016	0.99396	0.97783	0.10122	1.00773	1.00773	0.99779
4	1.00101	1.00095	1.00079	0.99828	0.99945	0.99805	1.00156	1.00065	1.00067	0.99981
5	1.00005	1.00006	1.00007	0.99995	0.99995	0.99983	1.00014	1.00005	1.00006	0.99998
6	1.00001	1.00001	1.00001	0.99999	0.99999	1.00001	1.00001	1.00001	1.00001	1.00001
7	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1

Result: 0.184940, 0.483350, 5.607 1.6797 2.015 3.74743, 0.88902, 2.131 173.35507, 6.63064, 0.41765

Balancing Matrix of Sum of col2010Q1				
GeoName	Sum of Sum of col2010Q1 by GeoName	Per capita personal income (dollars) 2/	Personal income (millions of dollars, seasonally adjusted)	Population (midperiod, persons) 1/
Far West	8918257.11	1344926.45	3516651.51	4056679.15
Great Lakes	1783514.22	2828456.08	6517954.04	2460953.31
Midwest	2674771.33	4560726.91	10525839.12	1126828.3
New England	35673028.44	14859755.52	10683963	10130209.92
Plains	44591285.56	13537899.91	13809972.86	17243412.79
Rocky Mountain	53599542.67	23635727.68	12821051.21	17052763.77
Southeast	82427799.78	6141046.96	23941389.71	32345363.11
Southwest	31348056.89	13363774.21	24803153.19	33179129.48
Total:	Sum of Sum of col2010Q1 by Description:	80264313.72	107019085.44	133773856.83

1b Scenario samples:

Report: Sample Sales Records by year in our Analytics from <http://OUReports.com>
Data:

The screenshot shows a web application interface for 'Online User Reporting'. The main content area displays a table titled 'Data for report: Sample Sales Records by year'. The table has columns for OrderYear, Region, Country, Item Type, Sales Channel, Order Priority, Name, Order Date, Order ID, Ship Date, Units Sold, Unit Price, Unit Cost, Total Revenue, Total Cost, and Total Profit. The table contains 30 rows of data, representing sales records from 2010 to 2016 across various regions and item types. A search bar and a 'Reset' button are visible above the table. The interface also includes a sidebar with navigation options like 'Log Off', 'List of Reports', and 'Report Definition'.

Parameters and Starting Matrix with manually entered target proportional values:

The screenshot shows the 'Advanced Analytics' interface for 'Sample Sales Records by year - Matrix Balancing'. The interface includes a sidebar with navigation options and a main content area with several sections:

- Scenario:** 1b: Starting Matrix of rows by matrix group field and selected multiple columns to balance by manually entered sums by rows and sums by columns.
- Matrix rows by:** Item Type
- Enter sums by rows:** 11.22,33.44,11.22,33.44,55.66,77.88
- Enter sums by columns:** 11.22,33.44,55.66
- Multiple fields:** select all fields, unselect all fields
- Units Sold Unit Price Unit Cost Total Revenue Total Cost Total Profit**

The main content area displays three tables:

- Starting Matrix:** A table with columns for Item Type, Sum of row, Item Type, Units Sold, Unit Price, Unit Cost, Total Revenue, Total Cost, and Total Profit. It lists 16 item types and their corresponding values.
- Target Matrix:** A table with columns for Item Type, Sum by Item Type, Units Sold, Unit Price, Unit Cost, Total Revenue, Total Cost, and Total Profit. It lists 16 item types and their corresponding values.
- Balancing coefficients:** A table with columns for Steps, k1, k2, k3, k4, k5, k6, k7, k8, k9, k10, k11, k12, k1, k2, k3, k4, k5, k6, Precision. It lists 12 steps and their corresponding coefficients.

Target values adjusted to grand total of starting matrix, and Balancing Coefficients and balancing Matrix:

Advanced Analytics

Enter sums by columns: 11,22,33,44,55,66

Multiple fields: select all fields unselect all fields

UnitsSold UnitPrice UnitCost TotalRevenue TotalCost TotalProfit

(1b) Balancing matrix of rows and multiple columns for given above sums by rows and by columns

Balancing for sum of rows and columns of the starting matrix of rows and multiple selected columns:
Balanced, precision: 0.42503, steps: 8

Item Type	Sum of row Item Type	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit
Baby Food	2844175.7	5559	255.28	159.42	1419100	886216	532886
Cereal	3579093.81	8656	205.7	117.11	1780540	1013700	766835
Office Supplies	2613383.17	2821	651.21	524.96	1316100	1006940	250151
Fruits	122225.45	6267	9.33	6.92	58471.1	43367.6	15103.5
Household	717940.81	5367	668.27	502.54	3588600	2697130	891473
Vegetables	459287.99	1495	154.06	90.93	228779	135031	93748
Personal Care	945979.4	3767	81.73	56.67	471337	326816	144521
Clothes	195114.32	888	109.28	35.84	97040.6	31825.9	65214.7
Cosmetics	6925110.53	7910	437.2	263.33	3458259	2002940	1375310
Beverages	78229.24	8156	47.45	31.79	307802	262278	427828
Meat	4027855.58	4767	421.89	364.69	2011150	1738450	272672
Snacks	1250913.02	4985	152.58	97.44	623289	398042	225247
Total: 30941684.02	Sum by columns:	60928	3193.98	2251.64	15437658.7	10673767.5	4763884.2

Item Type	Sum by Item Type	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit
Baby Food	672645.3						
Baby Food	1345290.61						
Cereal	2017935.91						
Office Supplies	2690581.22						
Fruits	672645.3						
Vegetables	1345290.61						
Personal Care	2017935.91						
Household	2690581.22						
Clothes	336326.52						
Cosmetics	4035871.83						
Beverages	4708517.13						
Meat	5381162.44						
Snacks	1473413.51						
Total: 30941684.01	Sum by columns:	1473413.51	2946827.05	4420240.57	5893654.1	7367067.62	8840481.15

Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10	k11	k12	k1	k2	k3	k4	k5	k6	Precision				
1	0.2365	0.3163	0.6571	0.1344	0.0939	0.9296	0.1273	0.7897	0.4856	0.1838	0.1899	4.30179	0.10376	0.634	0.7215	0.1636	0.83110	0.84040	0.72035	1.72695	2462566	88996	
2	1.11077	1.14690	0.87810	0.9169	1.17013	0.76201	1.21440	0.63706	1.16186	1.37151	1.86361	0.456	1.03169	1.11851	1.05001	0.96569	0.94639	0.06669	0.25323	90611			
3	1.00528	1.00870	0.9878	0.9948	1.008	0.9802	1.00620	0.96969	1.00917	1.00863	1.00831	0.0062	0.9994	1.00695	1.00339	0.99740	0.99696	0.00037	0.0971	33058			
4	1.00029	1.00057	0.99891	0.99852	1.00034	0.99865	1.00038	0.99808	1.00055	1.00064	1.00028	0.99999	0.99962	1.00047	1.00027	0.99980	0.99983	0.99999	0.99951	140	06764		
5	1.00001	1.00003	0.99991	0.99991	1.00010	0.9999	1.00020	0.99987	1.00003	1.00005	1.00001	0.99999	0.99995	1.00004	1.00002	0.99999	0.99999	1	45	64029			
6	1	1	0.99999	1.00002	1	0.99999	1	0.99999	1	1.00011	1	0.99999	1	1	1	1	1	1	45	64029			
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	60779			
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	74528		
Result:	0.26416	0.43613	0.66474	0.13714	0.11055	0.1846	2.40158	0.50109	0.56977	0.52176	1.40113	0.50065	6.29052	715.41081	1725.01550	0.37095	0.67954	1.73044	0.42903				

Item Type	Sum of row Item Type	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit
Baby Food	672645.31	9237.42	48243.84	72644.62	138721.44	159082.63	224715.35
Cereal	1345290.61	23748.7	64184.15	88109.56	287376.17	300442.28	581429.25
Office Supplies	2017935.95	8450.86	30969.65	601959.34	323742.57	479241.4	294852.28
Fruits	2690581.05	183800.76	132639	237201.84	429965.24	585916.2	821979.87
Household	672645.31	3741.97	82848.14	69206.13	148712.2	202599.21	170927.86
Vegetables	1345290.63	20407.21	24077.8	34266.59	184948.08	200456.32	356034.42
Personal Care	2017935.91	87123.54	140422.9	234771.39	418863.7	533356.79	603377.61
Clothes	2690581.27	47486.73	66461.06	525573.76	305273.51	183852.24	963778.97
Cosmetics	1363226.54	28350.27	178209.89	258813.85	729144.39	806466.81	1362241.33
Beverages	4035871.76	303819.75	20103.07	32479.96	848063.53	1843962.22	1314885.28
Meat	4708517.13	162015.95	42288.41	681440.74	1042758.42	1155242.1	664165.15
Snacks	5381162.47	115651.01	481276.38	756648.3	103861.85	1217349.42	1762337.51
Total: 30941684.02	Sum by columns:	1473413.51	2946827.05	4420240.57	5893654.1	7367067.62	8840481.15

Report: Movies in our Analytics from <http://OUReports.com>

Data:

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Interactive Reporting

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Export Statistics to Excel

See Fields Correlation

Matrix Balancing

Records returned: 201

AdultPrice	Category	CategoryName	ChildPrice	Description	Film	Length	PlayingNow	Rating	Start Time	Theatre Name	Tickets Sold
6.25	1	Drama	4.75	A post-modern excursion into family dynamics and Thai cuisine 1	130	TRUE	PG-1	12:05:00	General Cinema Boston	47000	
6.25	1	Drama	4.75	A post-modern excursion into family dynamics and Thai cuisine 1	130	TRUE	PG-1	14:35:00	General Cinema Boston	47000	
6.25	1	Drama	4.75	A post-modern excursion into family dynamics and Thai cuisine 1	130	TRUE	PG-1	17:05:00	General Cinema Boston	47000	
6.25	1	Drama	4.75	A post-modern excursion into family dynamics and Thai cuisine 1	130	TRUE	PG-1	19:35:00	General Cinema Boston	47000	
7.75	1	Drama	6.25	A post-modern excursion into family dynamics and Thai cuisine 1	130	TRUE	PG-1	12:05:00	Downtown Multiplex	47000	
7.75	1	Drama	6.25	A post-modern excursion into family dynamics and Thai cuisine 1	130	TRUE	PG-1	14:35:00	Downtown Multiplex	47000	
7.75	1	Drama	6.25	A post-modern excursion into family dynamics and Thai cuisine 1	130	TRUE	PG-1	17:05:00	Downtown Multiplex	47000	
7.75	1	Drama	6.25	A post-modern excursion into family dynamics and Thai cuisine 1	130	TRUE	PG-1	19:35:00	Downtown Multiplex	47000	
7.75	1	Drama	6.25	A post-modern excursion into family dynamics and Thai cuisine 1	130	TRUE	PG-1	12:15:00	Loews Cambridge	47000	
7.75	1	Drama	6.25	A post-modern excursion into family dynamics and Thai cuisine 1	130	TRUE	PG-1	14:45:00	Loews Cambridge	47000	
7.75	1	Drama	6.25	A post-modern excursion into family dynamics and Thai cuisine 1	130	TRUE	PG-1	17:15:00	Loews Cambridge	47000	
7.75	1	Drama	6.25	A post-modern excursion into family dynamics and Thai cuisine 1	130	TRUE	PG-1	19:45:00	Loews Cambridge	47000	
7.75	1	Drama	6.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	12:00:00	Downtown Multiplex	5000
7.75	1	Drama	6.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	14:00:00	Downtown Multiplex	5000
7.75	1	Drama	6.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	16:00:00	Downtown Multiplex	5000
7.75	1	Drama	6.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	18:00:00	Downtown Multiplex	5000
7.75	1	Drama	6.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	20:00:00	Downtown Multiplex	5000
7.75	1	Drama	6.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	12:15:00	Loews Cambridge	5000
7.75	1	Drama	6.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	14:15:00	Loews Cambridge	5000
7.75	1	Drama	6.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	16:15:00	Loews Cambridge	5000
7.75	1	Drama	6.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	18:15:00	Loews Cambridge	5000
7.75	1	Drama	6.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	20:15:00	Loews Cambridge	5000
6.75	1	Drama	5.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	12:05:00	General Cinema Downtown	5000
6.75	1	Drama	5.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	14:05:00	General Cinema Downtown	5000
6.75	1	Drama	5.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	16:05:00	General Cinema Downtown	5000
6.75	1	Drama	5.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	18:05:00	General Cinema Downtown	5000
6.75	1	Drama	5.25	A Jungian analysis of pirates and honor	3	101	TRUE	PG	20:05:00	General Cinema Downtown	5000
6.5	1	Drama	4	A charming diorama about sibling rivalry	4	124	TRUE	G	12:15:00	General Cinema Cambridge/7000	
6.5	1	Drama	4	A charming diorama about sibling rivalry	4	124	TRUE	G	14:35:00	General Cinema Cambridge/7000	
6.5	1	Drama	4	A charming diorama about sibling rivalry	4	124	TRUE	G	16:55:00	General Cinema Cambridge/7000	

1 2 3 4 5 6 7

Movie

ovwv02_x_20_10_x_03AH

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Online User Reporting

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Movies - Advanced Analytics - Matrix Balancing

Select Scenario: 1b: Starting Matrix of rows by matrix group field and selected multiple columns to balance by manually entered sums by rows and sums by columns

Steps: 100 Precision: 1 Partial rows/columns: 0.0 adjust by start matrix

1b: Starting Matrix of rows by group field for rows and selected columns from the multiple fields to balance by manually entered sums by rows and sums by columns

Enter:

Matrix rows by: CategoryName

Enter sums by rows: 11.22 33.44 22

Enter sums by columns: 11.22 33.44

Multiple fields: select all fields unselect all fields

AdultPrice ChildPrice Length TicketsSold

(b) Balancing matrix of rows and multiple columns for given above sums by rows and by columns

Balancing for sum of rows and columns of the starting matrix of rows and multiple selected columns:

yes, balanced, precision: 0.3753, steps: 5

Starting Matrix										
CategoryName	Sum of row	CategoryName	AdultPrice	ChildPrice	Length	TicketsSold				
Drama	7137		7.25	5.75	124	7000				
Animation	25134		7.25	5.75	121	25000				
Thriller	19142		8.75	5.25	130	15000				
Action	8117		8.75	5.25	105	8000				
Comedy	16115		8.75	5.25	103	16000				
Total: 75645	Sum by columns:		34.75	27.25	583	75000				

Balancing coefficients										
Steps	k11	k12	k13	k14	k15	k1j	k2	k3	k4	
1	0.88325	0.50161	0.98795	3.10644	0.78235	1.76	0.898	450	72659	32.1707
2	0.86784	1.40885	1.24166	0.79842	1.20844	1.05299	1.05306	1.0438	0.93524	
3	0.98163	1.11565	1.00321	0.98765	1.00642	1.00231	1.00229	1.00189	0.99661	
4	0.99918	1.0007	1.00036	0.99944	1.00028	1.0001	1.0001	1.00008	0.99986	
5	0.99996	1.00003	1.00002	0.99997	1.00001					
Result:	0.57871	0.7174	1.23742	0.4482	0.95177	185.86815	475.78206	33.64476	0.37678	

Target Matrix									
CategoryName	Sum by Category	AdultPrice	ChildPrice	Length	TicketsSold				
Drama	11								
Animation	22								
Thriller	33								
Action	44								
Comedy	55								
Total: 110	Sum by columns:	11	22	33	44				

Balancing Matrix										
CategoryName	Sum of row	CategoryName	AdultPrice	ChildPrice	Length	TicketsSold				
Drama	6303.75		779.84	1583.21	2414.36	1526.33				
Animation	12607.5		966.73	1962.84	2920.58	3076.57				
Thriller	8911.25		1552.25	3090.44	5411.44	3857.32				
Action	25215		3071.54	6115.25	9648.78	7379.45				
Comedy	12607.5		1194.1	2377.39	3298.28	5737.72				
Total: 75644.98	Sum by columns:		7564.46	15128.93	22693.4	30268.19				

2a Scenario samples:

Report: Sample Sales Records by year in our Analytics from <http://OUReports.com>
Data:

Interactive Reporting

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Online User Reporting

hide duplicate records Report delimiter: [] Reset Help for this page

Data for report: Sample Sales Records by year Search: [] Search

Records returned: 100

OrderYear	Region	Country	Item Type	SalesChannel	OrderPriority	CName6	OrderDate	OrderID	ShipDate	UnitsSold	UnitPrice	UnitCost	TotalRevenue	TotalCost	TotalProfit	Index
2010	Australia and Oceania	Turkvy	Baby Food	Offline	H		5/28/2010	869186000/6/27/2010	1925	255.28	159.42	2533650	1852340	661310	1	
2012	Central America and the Caribbean	Costa Rica	Cereal	Online	C		9/22/2012	963981000/9/15/2012	2904	205.7	117.11	578763	329376	249386	2	
2014	Europe	Russia	Office Supplies	Offline	L		5/2/2014	341417000/5/8/2014	1779	651.21	524.96	1158580	933904	224599	3	
2014	Sub-Saharan Africa	Sao Tome and Principe	Fruits	Online	C		6/20/2014	514322000/7/6/2014	8102	9.33	6.92	75591.7	56065.8	19525.8	4	
2013	Sub-Saharan Africa	Rwanda	Office Supplies	Offline	L		2/12/2013	115457000/2/6/2013	5062	651.21	524.96	3296420	2657350	639070	5	
2015	Australia and Oceania	Solomon Islands	Baby Food	Online	C		2/4/2015	547996000/2/21/2015	2974	255.28	159.42	759203	474115	285088	6	
2011	Sub-Saharan Africa	Angola	Household	Offline	M		4/23/2011	135425000/4/27/2011	4187	668.27	502.54	2798050	2104410	693912	7	
2012	Sub-Saharan Africa	Burkina Faso	Vegetables	Offline	H		7/17/2012	871544000/7/27/2012	8082	154.06	90.93	1245110	734896	510217	8	
2015	Sub-Saharan Africa	Republic of the Congo	Personal Care	Offline	M		7/14/2015	770463000/8/25/2015	6070	81.73	56.67	498101	343907	152114	9	
2014	Sub-Saharan Africa	Senegal	Cereal	Online	H		4/18/2014	616607000/5/30/2014	6593	205.7	117.11	1356180	772106	584074	10	
2011	Asia	Kyrgyzstan	Vegetables	Offline	H		6/24/2011	814712000/7/12/2011	124	154.06	90.93	19103.4	11275.3	7828.12	11	
2014	Sub-Saharan Africa	Cape Verde	Clothes	Offline	H		8/2/2014	939826000/8/19/2014	4168	109.28	35.84	455479	149381	306098	12	
2017	Asia	Bangladesh	Clothes	Online	L		1/13/2017	107311000/3/1/2017	8263	109.28	35.84	902961	296146	606815	13	
2017	Central America and the Caribbean	Honduras	Household	Offline	H		2/8/2017	522840000/2/13/2017	8974	668.27	502.54	5997060	4509790	1487260	14	
2014	Asia	Mongolia	Personal Care	Offline	C		2/19/2014	832401000/2/23/2014	4901	81.73	56.67	406559	277440	128919	15	
2012	Europe	Bulgaria	Clothes	Offline	M		4/23/2012	972292000/6/3/2012	1673	109.28	35.84	182825	89960.3	122865	16	
2016	Asia	Sri Lanka	Cosmetics	Offline	M		1/19/2016	415924000/1/28/2016	16952	437.2	263.33	3839410	1839070	1207440	17	
2015	Sub-Saharan Africa	Cameroon	Beverages	Offline	C		4/1/2015	519821000/4/18/2015	5430	47.45	31.79	267654	172620	86033.8	18	
2010	Asia	Turkmenistan	Household	Offline	L		12/30/2010	10441619000/1/20/2011	3830	668.27	502.54	2559470	1924730	634746	19	
2012	Australia and Oceania	East Timor	Meat	Online	L		7/31/2012	322086000/9/11/2012	5988	421.89	364.69	2492530	2164590	337938	20	
2014	Europe	Norway	Baby Food	Online	L		5/14/2014	819038000/6/28/2014	7450	255.28	159.42	1901840	1187680	714157	21	
2015	Europe	Portugal	Baby Food	Offline	H		7/31/2015	860674000/9/30/2015	1273	255.28	159.42	324971	202842	122030	22	
2016	Central America and the Caribbean	Honduras	Snacks	Online	L		6/30/2016	795491000/7/26/2016	2225	152.58	97.44	339490	216804	122686	23	
2014	Australia and Oceania	New Zealand	Fruits	Online	H		9/8/2014	14227000/10/4/2014	2187	9.33	6.92	20404.7	15134	5270.67	24	
2016	Europe	Moldova	Personal Care	Offline	L		5/7/2016	740148000/5/10/2016	5070	81.73	56.67	414371	287317	127054	25	
2017	Europe	France	Cosmetics	Offline	H		5/22/2017	898523000/6/5/2017	1815	437.2	263.33	793518	477944	315574	26	
2014	Australia and Oceania	Kiribati	Fruits	Offline	M		10/13/2014	1347140000/11/10/2014	5398	9.33	6.92	50363.3	37354.2	13009.2	27	
2010	Sub-Saharan Africa	Mali	Fruits	Online	L		6/7/2010	686040000/5/10/2010	8622	9.33	6.92	54319.3	40288.2	14031	28	
2014	Europe	Norway	Beverages	Offline	C		7/18/2014	435609000/7/30/2014	5124	47.45	31.79	243134	162892	80241.8	29	
2012	Sub-Saharan Africa	The Gambia	Household	Offline	L		5/26/2012	88649000/6/9/2012	2370	668.27	502.54	1583800	1191020	392780	30	

1 2 3 4

Last imported from the file SampleSalesRecordsYear.csv on 7/18/2022 11:08:40 AM

Parameters, Starting, and Target matrix:

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Sample Sales Records by year - Advanced Analytics - Matrix Balancing

Select Scenario: 2a: Starting Matrix of aggregated field1 to balance for sums of rows and columns of the Target Matrix of the aggregated field2

1000 Precision: 1 Partial rows/columns: 0.0 adjust by start matrix

2a: Starting Matrix of aggregated field1 to balance for sums of rows and columns of the Target Matrix of the aggregated field2

Enter:
 Matrix rows by: ItemType columns by: Region
 Matrix items by field1: OrderID aggregation function: Count
 Iterations by the field2: TotalProfit aggregation function: Sum

(2a) Balancing matrix of field1 for the sums by rows and by columns of the matrix of field2

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Balanced, precision: 0.1538, steps: 2, maximum difference of cells in balancing and target matrixes = 759943.66, maximum difference of cells in balancing and starting matrixes = 4837916.32

Starting Matrix of Count of OrderID

ItemType	Sum of Count of OrderID by ItemType	Asia	Australia and Oceania	Central America and the Caribbean	Europe	Middle East and North Africa	North America	Sub-Saharan Africa
Baby Food	7	2	0	0	0	0	0	0
Beverages	8	0	2	0	0	2	0	0
Cereal	7	0	1	1	0	1	0	0
Clothes	13	2	1	1	3	2	0	0
Cosmetics	13	1	1	1	5	3	0	0
Fruits	10	1	2	0	0	0	0	0
Household	9	2	0	0	2	0	1	0
Meat	2	0	0	0	0	0	0	0
Office Supplies	12	0	1	0	0	0	0	0
Personal Care	10	1	0	0	0	0	0	0
Snacks	3	0	0	0	0	0	0	0
Vegetables	6	2	0	0	0	0	0	0
Total: 100	Sum of Count of OrderID by Region:	13	9	7	7	22	10	3

Target Matrix of Sum of TotalProfit

ItemType	Sum of Sum of TotalProfit by ItemType	Asia	Australia and Oceania	Central America and the Caribbean	Europe	Middle East and North Africa	North America	Sub-Saharan Africa
Baby Food	388644	1236458	0	0	0	0	0	0
Beverages	888047.29	0	293907	127723	153217.41	0	0	0
Cereal	2292443.03	0	60418.4	248406	0	355941	0	0
Clothes	523332.75	1042334	727423	403773	865416	1028160	0	0
Cosmetics	1455604.6	1208740	1676540	296448	5233492	4105940	0	0
Fruits	120495.26	15103.5	18279.87	0	0	11599.99	0	0
Household	7412606.88	2002016	0	1482260	794675.88	0	1152490	1976165
Meat	610610	0	337930	0	0	0	0	0
Office Supplies	5929580	1479397	369155	0	1774188	255151	0	0
Personal Care	1220621.79	122819	0	160810	133895.38	0	305456	497841.41
Snacks	751944	0	0	122686	0	0	0	0
Vegetables	1265819.33	243429.13	0	0	10795.2	0	0	0
Total: 44168190.33	Sum of Sum of TotalProfit by Region:	7350336.63	3485661.27	284696	11082939.87	5761191.39	1457946	12183209.17

Balancing coefficients

Steps	k11	k12	k13	k14	k15	k16	k17	k18	k19	k110	k111	k112	k11	k12	k13	k14	k15	k16	k17	Precision	
1	1	25638.0	25124.0	74115.0	0.911372	53488.0	0.27281	1.86433	0.689531	1.11857	0.2763	0.56656	0.47734	1.180541	2.20358	0.901570	8.63691	1.46781	3.6095	0.93999	12.84994
2	1	0.26031	0.10220	0.998250	0.991521	0.05882	0.526960	0.81330	0.932960	0.999770	0.971661	0.07811	0.9925	0.999811	0.005450	0.998340	0.994830	0.998141	0.21231	0.02950	0.33757
Result:	1.30165	0.25582	0.73985	0.90364	2.54963	0.025291	1.82952	0.64332	1.11831	0.26847	0.61081	0.47376	1.18032	1.21014	0.90007	0.89522	1.44651	3.0934	0.94195	0.1538	

Balancing Matrix of Sum of TotalProfit

ItemType	Sum of Sum of TotalProfit by ItemType	Asia	Australia and Oceania	Central America and the Caribbean	Europe	Middle East and North Africa	North America	Sub-Saharan Africa
Baby Food	3877256.48	1357152.62	898.72	817.46	1975896.68	858.07	799.03	541534.89
Beverages	889627.6	88930	273462.24	101656.19	18463.05	29.33	157.04	19265.8
Cereal	2295972.9	385.7	395448.49	294123.54	280.78	374945.38	854.17	1231234.84
Clothes	5231241	942174.29	482889.08	359234.37	1028794.16	1028794.16	854.71	1503796.23
Cosmetics	14533004.34	1329178.88	1362760.61	1013583.29	4837921.32	3867009.13	1565.12	2121487.88
Fruits	120568.21	13181	27028.87	80.65	88	88387.82	15.52	42075.15
Household	7431894.66	1907539.79	977.87	727311.14	1388607.77	924.94	1123077.34	2283455.81
Meat	613056.04	338.38	343852.85	855.75	244.14	325.24	394.91	267647.76
Office Supplies	5929759.87	1166003.68	597732.25	444.58	1273201.57	565380.8	886.49	2326310.49
Personal Care	1227144.7	139962.22	143.5	106730.23	203773.08	135.73	329614.94	446784.99
Snacks	752624.64	318.43	126.47	242822.59	231.8	308.8	374.95	508241.50
Vegetables	1266039.89	493965.11	253.22	188.34	179792.79	239.52	290.83	591310.08
Total: 44168190.28	Sum of Sum of TotalProfit by Region:	7350328.56	3485671.15	2846918.13	11082918.74	5761202.14	1457985.05	12183166.51

Report: Art Comp. in our Analytics from <http://OUReports.com>

Field GeoName has State info, field Description has info about specific types of compensations, multiple columns have years compensation in thousands of dollars.

Data:

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Records returned: 1989

GeoFIPS	GeoName	Region	Table Name	LineCode	Industry Classification	Description	Unit	col2001	col2002	col2003	col2004	col2005	col2006	col2007	col2008	col2009	col2010	col2011	col2012	col2013	col2014	col2015	col2016	col2017	col2018	col2019	indx	
01000	Alabama	5	SAACArtsComp	1	...	Total compensation	Thousands of dollars	2064300	74181800	71191200	81625100	86396900	91146700	95286200	97639500	95339000	96826700	98908700	100369000	102166000	106913000	109997000	112810000	116556000	121478000	126847000	1	
01000	Alabama	5	SAACArtsComp	10	...	Total ACP/SA compensation	Thousands of dollars	2350680	2495680	2424940	2452210	2466920	2412150	2383510	2400720	2321610	2334420	2361960	2316500	2334680	2360770	2412350	2478570	2586030	2610580	2631230	2	
01000	Alabama	5	SAACArtsComp	100	...	Core arts and cultural production	Thousands of dollars	441165	252670	259548	264496	278895	296302	309949	329961	321495	299217	288306	306156	301959	322038	325388	337840	363636	394537	402926	3	
01000	Alabama	5	SAACArtsComp	111	...	Performing arts companies	Thousands of dollars	22663	19591	19305	20302	19980	19148	18476	19040	20738	20596	21283	19770	18744	20004	19169	20043	0	0	20691	4	
01000	Alabama	5	SAACArtsComp	112	...	Promoters of performing arts and similar events	Thousands of dollars	6434	10248	10332	7947	8069	8972	9224	10448	13899	14466	16096	19645	21085	21989	21204	24084	16933	17545	16785	5	
01000	Alabama	5	SAACArtsComp	113	...	Agents/managers for artists	Thousands of dollars	714	515	607	642	576	616	807	767	1019	1211	787	768	1079	1075	1004	1060	1019	1116	1399	6	
01000	Alabama	5	SAACArtsComp	114	...	Independent artists, writers and performers	Thousands of dollars	2707	5778	8274	7679	10599	10679	8085	9521	9002	8054	7747	7189	9964	7671	8685	10361	11660	13303	12724	7	
01000	Alabama	5	SAACArtsComp	120	...	Museums	Thousands of dollars	3738	15080	0	0	0	18118	0	0	0	20448	0	24984	25117	0	0	26605	28206	29281	33294	8	
01000	Alabama	5	SAACArtsComp	131	...	Advertising	Thousands of dollars	8911	37287	38565	43590	46600	49531	50895	54541	47278	47936	46162	46525	0	48445	48984	0	53801	57904	56983	9	
01000	Alabama	5	SAACArtsComp	132	...	Architectural services	Thousands of dollars	65823	64200	70661	73016	80902	91004	102254	106287	98202	78814	75187	76164	77907	76784	82228	83471	99050	109369	109726	10	
01000	Alabama	5	SAACArtsComp	133	...	Landscape architectural services	Thousands of dollars	9320	5603	6094	4046	3685	4756	4890	5074	5072	6660	6034	6201	6472	8274	7471	7874	8121	8307	8298	11	
01000	Alabama	5	SAACArtsComp	134	...	Interior design services	Thousands of dollars	4882	5025	5063	5232	5149	5964	7266	5984	4721	4944	4295	5866	4329	6340	7107	8661	9711	11199	14121	12	
01000	Alabama	5	SAACArtsComp	135	...	Industrial design services	Thousands of dollars	228	570	705	475	536	896	835	3700	3750	3748	3607	3681	1584	2204	2126	2332	2970	2292	2040	13	
01000	Alabama	5	SAACArtsComp	136	...	Graphic design services	Thousands of dollars	6902	6734	7203	8309	8670	9158	9342	10664	9923	9976	8513	11077	9464	14687	16431	17329	22293	24754	26057	14	
01000	Alabama	5	SAACArtsComp	137	...	Computer systems design	Thousands of dollars	9219	9689	10820	10978	11098	11535	13283	16888	16933	17637	18233	20226	18847	20037	20720	20307	20914	21983	21185	15	
01000	Alabama	5	SAACArtsComp	138	...	Photography and photofinishing services	Thousands of dollars	42425	44997	40849	37160	34543	31112	30388	30971	31461	28660	0	0	0	0	0	0	0	0	0	28461	16
01000	Alabama	5	SAACArtsComp	139	...	All other design services	Thousands of dollars	164	876	716	923	899	941	1071	1212	1108	901	971	1284	1114	1522	1246	945	1457	1573	1587	17	
01000	Alabama	5	SAACArtsComp	140	...	Fine arts education	Thousands of dollars	7444	6597	0	0	0	12767	0	0	0	13258	12789	0	0	12435	12756	13158	14142	16676	17787	18	
01000	Alabama	5	SAACArtsComp	150	...	Education	Thousands of dollars	15653	19880	19065	19605	20812	21014	20277	20771	22378	21909	22488	23873	24913	26254	27526	27619	30499	31788	19		
01000	Alabama	5	SAACArtsComp	200	...	Supporting arts and cultural	Thousands of dollars	1994800	2124160	2047520	2066360	2068400	1984950	1937300	1935570	1870810	1915800	1955100	1886630	1922740	1926720	1960180	2017860	2099300	2091900	2100660	20	

Parameters and starting matrix to compare data for year 2001 to 2019 and see the balanced matrix:

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Arts Comp - Advanced Analytics - Matrix Balancing

Select Scenario: [2a: Starting Matrix of aggregated field1 to balance for sums of rows and columns of the Target Matrix of the aggregated field2] Steps: 100 Precision: 0 Partial rows/columns: 0,0 adjust by start matrix

2a: Starting Matrix of aggregated field1 to balance for sums of rows and columns of the Target Matrix of the aggregated field2

Enter:

Matrix rows by: GeoName columns by: Description

Matrix items by field1: col2001 aggregation function: Sum

Iterations by field2: col2019 aggregation function: Sum

(2a) Balancing matrix of field1 for the sums by rows and by columns of the matrix of field2

Balancing for sum of rows and columns of the starting matrix for sum values of the field1 'col2001' and the target matrix for sum values of the field2 'col2019':

yes, balanced, precision: 0.87707, steps: 5, maximum difference of cells in balancing and target matrix = 51227096.07, maximum difference of cells in balancing and starting matrix = 888172120.07

GeoName	Sum of Sum of col2001 by GeoName	Advertising	Agents/managers for artists	All other design services	Architectural services	Broadcasting	Computer systems design	Construction	Custom architectural woodwork and metalwork manufacturing	Education services	Fine arts education	Government	Grantmaking and giving services	Graphic design services	Indep writers,
Alabama	7832655	38911	714	764	58823	0	9219	14954	0	15653	7444	1023820	1105	6902	5707
Alaska	16988214	3824	0	0	21805	58931	690	22749	0	1964	1843	499296	827	289	3403
Arizona	107063509	88689	3830	7100	191890	365637	7409	264248	19290	22140	11896	1504320	2895	36531	48870
Arkansas	4292947	19899	350	518	40436	0	0	45765	8686	5369	0	483942	810	4226	3549
California	922784155	1093920	432009	49490	1399460	1979640	231538	1966620	127208	122006	166458	0	48872	607958	406129
Colorado	126183646	91885	19245	1229	213058	1099440	31308	196437	13665	21969	16908	1728250	3050	46168	53837
Connecticut	107809761	150365	10588	5733	130630	391662	14661	129191	8428	60517	24356	786464	5486	46652	71251
Delaware	21966483	8541	0	0	19137	5414	4653	14136	0	1103	6388	141642	219	3936	8414
District of Columbia	62034420	0	4281	0	186222	229419	4139	68891	303	160419	26750	3440090	7817	31154	20694
Florida	338699293	304936	32249	13121	421677	1317000	33646	529651	25364	55481	47545	3066960	8704	82954	102133
Georgia	196637758	182908	4272	6170	281470	1263950	38614	317573	0	40110	15530	2165600	3468	73988	36103
Hawaii	27128369	0	0	0	53257	0	1248	49007	488	11711	2800	279264	2446	3113	9473
Idaho	28331496	7396	330	8	20622	59801	1824	46987	3329	3697	914	430426	484	3860	78828
Illinois	130331338	507032	15196	6779	549752	990699	46888	939591	34065	109125	67424	4448810	11670	227317	176471
Indiana	130465872	52896	2161	1772	114388	284682	8027	118021	28233	38464	10616	1602530	4366	26218	19265
Iowa	58546275	39562	584	612	41783	153806	0	78992	7803	25919	9049	830455	2029	9006	7847
Kansas	58922540	40258	1756	88	62612	0	5244	60133	0	13298	5788	834259	1573	13168	6040
Kentucky	75316694	38701	2162	1126	54934	189769	4063	82327	0	18039	5762	95879	918	16582	6726
Louisiana	77242536	30276	1293	4874	56975	0	2980	103794	3088	17114	4568	664992	1164	10238	10992
Maine	24872482	16326	395	1052	30831	69704	1885	38172	0	8002	1526	230918	892	4659	8222
Maryland	133883074	109511	4698	7267	191966	0	39953	151617	13623	41466	17825	1163380	8574	58153	33845
Massachusetts	205105767	257681	3115	6322	521851	0	43155	259014	20837	241751	51321	1993900	5104	108291	55448
Michigan	234122424	257080	12777	1531	224300	480235	22057	315351	23937	31746	23500	284420	6962	69469	45849
Minnesota	134012945	197635	87186	1939	241220	0	0	182896	15863	31940	32908	1548880	5146	69526	35140
Mississippi	41949230	13636	1042	380	29293	84418	1309	83683	5634	6042	0	69614	832	2146	4640
Missouri	123235358	124826	5340	3520	202944	0	12770	207961	22951	52006	12840	1103620	4092	45227	27289
Montana	14729541	3474	0	0	22353	48747	0	6885	0	2338	1219	380400	0	1853	6500
Nebraska	37688228	34590	318	0	57763	0	6324	48265	1134	13235	0	499653	1950	7308	15696

Result - color coded target matrix and balancing matrix.

Balancing Matrix of Sum of col2019

GeoName	Sum of Sum of col2019 by GeoName	Advertising	Agents/managers for artists	All other design services	Architectural services	Broadcasting	Computer systems design	Construction	Custom architectural and interior design services	Education services	Fine arts education	Government	Grantmaking and giving services	Graphic design services	Independent artists, writers, and performers	Industrial design services	Interior design services	Jewelry and silverware manufacturing	Landscape architecture services	Motion pictures	Museums	Musical instruments manufacturing	Other manufacturing
Alabama	134589800	63797.94	1521.5	2405.68	102240.86	0	32526.5	174188.49	0	93357.57	19757.84	1013224.39	3265.04	13194.66	10970.04	1499.76	12980.04	1120.53	7677.01	35405.99	18907.32	0	1818
Alaska	32135481	6592.72	0	3778.6	13420.24	2714.29	2564.23	0	5565.97	4292.86	55047.21	266.6	616.01	7293.43	0	1796.96	416.54	0	3643.38	12126.56	0	0	199
Arizona	220432276	135771.29	9839.18	4175.64	359351.63	900833.96	31513.72	372283.69	62040.71	67111.16	38414.6	1795485.58	10312.43	85113.99	113247.6	13880.18	95880.2	7116.47	64813.44	119444.58	77862.8	22436.94	170
Arkansas	78162847	33707.67	778.22	1701.9	65540.4	0	55804.52	23884.12	14005.89	0	468751.32	1800.68	8427.72	7318.7	2611.73	5423.77	251.82	3649.31	24847.84	5077.81	7926.78	1435	0
California	1930620745	2192258.2	1125221.78	190473.14	2657132.26	4944999.33	996499.17	2423440.08	414005.36	374958.94	541113.14	0	180116.89	1420590.37	9541926.69	413069.2	564236.73	182766.17	529442.14	20980702	1725311.99	175014.2	0
Colorado	242251629	168332.61	8828.87	4381.98	373438.91	2832091.13	124007.64	245793.51	41091.77	62262.72	50686.38	1927861.03	10158.11	99483.62	116645.55	14071.06	36939.17	5939.51	84831.05	86629.48	54465.7	46567.92	974
Connecticut	160571701	21358.03	19507.79	15607.99	157446.38	692054.42	44723.71	130535.34	21745.95	131561.47	55992.67	872948.07	13810.52	77110.65	118416.39	19185.29	34586.03	14880.81	23889.81	117379.79	65181.62	5535.07	5154
Delaware	36085131	13778.82	0	24666.31	108822.4	16154.26	13665.71	0	7677.39	15932.6	137935.04	636.75	7404.22	82131.92	0	4296.66	0	3950.68	7716.52	34017.61	0	0	220
District of Columbia	123152884	0	1951.61	0	347272.96	562855.21	17531.06	9649.03	970.42	484223.23	85407.2	4807059.98	27728.42	73793.41	47753.35	0	56528.96	920.44	14386.28	163696.09	35456.14	0	284
Florida	65959491	501046.35	78604.14	47858.3	759123.37	3095960.46	137609.57	716987.46	78382.97	161592.37	164476.6	4364216.45	29791.38	205843.63	227420.3	51299.78	386878.17	122111.35	189400.83	764041.6	210655.32	6477.2	525
Georgia	365442519	325472.76	9879.9	21085.18	474526.64	2803404.16	147858.41	402779.24	0	1094531.84	14826.07	323599.61	11121.22	153506.48	16501.31	128089.15	39565.75	69533.74	301048.17	10526.25	0	0	0
Hawaii	55470339	0	0	98204.97	0	5259.9	8841.78	1552.2	35714.98	8095.67	339145.11	8633.59	7109.65	278781.89	0	8095.25	11667.58	12422.23	52478.76	55200.27	1107.65	874	
Idaho	47881089	14475.23	839.42	0	53629.47	144128.65	8103.13	65513.36	10601.47	11096.2	2901.7	508481.18	1424.96	8352.16	16506.2	0	4117.75	1177.85	3261.59	18145.74	0	0	1328
Illinois	524138624	764588.07	29781.69	19631.64	785405.08	1862071.65	158668.67	423456.35	83882.04	252348	1684919.71	31173.43	399670.28	311975.2	78529.22	98341.26	0	15732.91	434320.96	29007.9	28490.73	0	0
Indiana	211396161	81681.41	4361.87	5265.09	185278.95	551077.44	26825.71	130641.03	17144.35	91607.19	26743.42	150221.04	12219.52	45664.48	35076.29	13021.39	30993.88	12887.31	8500.04	38834.71	6048.25	62192.63	651
Iowa	10219764	8866.88	132.85	2032.63	6240.79	131545.31	0	84479.31	28697.41	88740.13	14163.75	866881.25	8325.81	18160.04	15609.82	2027.38	5455.27	0	14307.49	4912.4	19007.9	3159.49	2154
Kansas	99589060	6533.86	3703.82	280.5	96269.84	0	18133.38	6956.95	0	33095.49	15239.37	81721.11	4600.51	24943.45	11491.82	4453.45	8446.96	225.88	9354.71	38454.84	14775.4	2186.12	0
Kentucky	128857397	63360.21	4600.33	3640.32	85208.38	387251.93	14313.98	86067.9	0	45290.1	15301.89	848666.74	2708.5	31653.41	12909.73	2176.39	12590.94	1560.69	7659.49	47739.9	28933.56	0	529
Louisiana	132719670	51321.27	2045.63	15606.99	98955.02	10070.12	125404.37	8517.26	44480.4	12532.87	580380.05	3555.05	20235	2455.76	6802.56	34645.28	28481.8	38311.8	40251.81	189.26	178	0	
Maine	41908074	6474.69	639.26	3258.04	47104.68	149107.54	6541.25	34879.72	0	21767.46	16289.66	162140.52	1700.45	8760.16	88746.63	2176.16	2530.84	1873.25	2734.58	37945.11	13189.79	569.96	179
Maryland	249261835	189734.12	10877.87	24846.09	307117.58	0	153165.32	205220.32	39490.11	113287.05	51510.83	1681140.76	17895.76	120796.13	76899.06	43585.04	70013.72	0	52384.41	132763.73	73268.82	10016.35	178
Massachusetts	380918965	456513.11	7172.47	21569.79	875290.28	0	16421.22	366211.56	60066.25	656004.59	148088.41	1704006.94	16296.73	223693.33	115165.75	36386.17	77737.31	107954.2	43229.16	188443.87	23392.15	28747.18	0
Michigan	328665883	3452.76	2233.15	3848.87	25413.11	803943.98	6374.16	301979.68	5210.83	85385.81	51158.65	2141328.68	16865.92	10187.33	72192.8	18919.3	57036.56	24500.61	46093.93	21722.43	81738.9	14782.35	1183
Minnesota	237021731	335410.3	139415.69	6319.77	387858.26	0	21237.61	42976.43	0	83127.45	90502.44	1596841.42	1732.98	138369.71	69916.69	9109.65	39553.5	24666.46	21511.68	164876.56	140878.13	1747.31	360
Mississippi	67167532	20887.65	2074.48	1000.21	38100.27	161180.15	4314.81	89420.99	14042.46	18891.35	0	541639.26	1192.55	3832.85	8691.88	719.83	1693.3	509.24	7919.85	13544.95	0	2971.69	1147
Missouri	201295136	200968.52	11173.87	10883.68	395660.65	0	44241.84	8693.15	0	12821.31	33532.45	1072480.77	11872.72	84900.44	51508.22	7193.53	21377.73	5226.63	11699.23	11243.66	66951.4	0	884
Montana	30912626	7045.4	0	42949.82	123224.69	0	8693.15	0	0	725.16	4010.12	40454.96	0	4381.68	15454.51	0	2695.96	6682.95	6379.22	16913.23	7905.5	0	175
Nebraska	70651467	82993.96	741.93	0	98241.52	0	24429.24	59196.08	3312.35	36495.03	0	541396.04	6308.48	15296.3	33033.43	0	3940.28	309.18	8117.14	21941.91	28759.82	0	0
Nevada	106143557	66501.25	15253.34	2177.83	437593.73	12215.5	448389.35	12477.22	11471.99	8129.11	1014046.66	1664.72	26215.25	112304.5	0	28324.77	3392.6	5665.34	92913.42	14637.37	0	0	125
New Hampshire	53687146	22768.34	13264.66	2177.83	37577.82	134768.92	20190.48	20315.62	15871.84	71667.89	18375.38	356227.61	2111.55	23859.33	14906.42	18919.9	3532.41	3622.49	3129.8	27591.66	16103.19	0	129
New Jersey	384124547	384225.02	138019.72	29992.29	299881.54	2839553.57	176896.65	282024.75	33848.37	130641.68	152345.35	2674249.39	8600.16	166313.14	154926.71	53945.65	52885.83	0	43555.94	29380.25	76800.54	5720.8	0
New Mexico	57690222	11460.75	400.05	350	65956.5	164931.67	8886.01	39994.68	0	10399.59	12227.03	545497.19	4396.51	9733.89	38924.3	3879.62	4092.15	37463.61	16634.71	26139.09	13319.47	841.3	0
New York	1010184215	2093962.24	479307.67	971819.33	1442819.05	5851609.58	237038.11	84740.76	191604.51	721281.5	449147.23	7040221.33	13932.96	74944.3	177045.98	187428.28	447115.99	450755.87	8997.78	492776.29	795075.9	61044.52	854
North Carolina	347129995	144491.76	9767.29	31433.95	135841.12	991364.38	90433.22	175848.68	370286.79	154545.72	366709.84	13743.95	85242.68	107522.95	35550.39	49664.84	5385.76	62633.13	129792.94	60334.74	5081.15	0	0
North Dakota	32133147	14709.13	0	0	22869.15	123534.62	0.01	14260.23	0	14616.79	3167.73	322409.42	885.6	14055.58	0	277.38	294.34	0	8672.56	8124.8	0	0	303
Ohio	388178848	250251.41	18482.21	7620.87	398730.49	1217638.84	115222.66	319776.68	115720.29	18950.45	88088.48	8007978.88	19605.03	195948.48	63257.71	89490.23	52284.66	17484.22	20336.67	190716.29	201196.39	26955.83	164
Oklahoma	112445874	60446.97	2617.08	971819.33	1442819.05	5851609.58	237038.11	84740.76	191604.51	721281.5	449147.23	7040221.33	13932.96	74944.3	177045.98	187428.28	447115.99	450755.87	8997.78	492776.29	795075.9	61044.52	854
Oregon	152555425	114459.2	2134.4	5120.2	180837.17	0	20546.15	133019.72	0	53117.51	19073.63	149202.91	8416.27	55501.56	32528.62	12929.74	16866.23	5737.07	15976.24	13969.5	54823.35	11596.87	189
Pennsylvania	477357184	395372.54	12027.78	16055.99	52																		

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Report Scenario: 2a: Starting Matrix of aggregated field to balance for sums of rows and columns of the Target Matrix of the aggregated field

2a: Starting Matrix of aggregated field to balance for sums of rows and columns of the Target Matrix of the aggregated field

Enter:

Matrix rows by: GeoName | columns by: Description

Matrix items by field1: col2021Q1 | aggregation function: Sum

Iterations by the field2: col2021Q1 | aggregation function: Sum

(2a) Balancing matrix of field1 for the sums by rows and by columns of the matrix of field2

Balancing for sum of rows and columns of the starting matrix for sum values of the field1 'col2021Q1' and the target matrix for sum values of the field2 'col2021Q1'

yes, balancing, precision: 0.3187, steps: 5, maximum difference of cells in balancing and target matrix = 10648.59, maximum difference of cells in balancing and starting matrix = 315718.39

GeoName	Sum of Sum of col2021Q1 by GeoName	Accommodation and food services	Administrative and support and waste management and remediation services	Agriculture, forestry, fishing and hunting	Arts, entertainment, and recreation	Construction	Educational services	Finance and insurance	Health care and social assistance	Information and communication	Manufacturing and construction	Mining, quarrying, and oil and gas extraction	Other services (except government and technical services)	Professional, scientific, and technical services	Real estate and rental and leasing	Retail trade	Transportation and warehousing	Utilities	Wholesale trade	
Far West	2327882.2	83594.6	77880.4	37148.3	35965.7	92271.7	28731.4	127733	172523	187310	36866.6	309500	30996.4	56548	208050	422083	157244	71990.5	40463.6	140882
Great Lakes	1783366.2	48265.6	60167.1	17212.7	19291.5	65211.2	25972.2	146002	168506	67527.8	44202.5	346152	8714.6	46912.1	124005	242630	117772	62400.6	40387.3	132034
Midwest	2363171.4	62126.1	73365.1	0	31456	85028.1	54309.7	307906	213203	178960	51847.4	216778	0	60764	235759	383197	134755	63340.1	51879.9	148498
New England	778218.2	20791.6	21163	0	7894.2	24546.4	22268	83245.4	75289	39913.4	16162.2	91990.6	0	16149.1	70412.1	122224	43570.8	13022.4	13726.9	45803.7
Plains	823195.2	21784.2	23142.8	26525.9	7899.2	34363.7	10531	77247.7	77306.9	39056.6	23778.8	128137	7976.8	21047.5	47887	103861	55704.1	33460.6	18542.6	64484.8
Rocky Mountain	427217.6	13781.3	13486.7	6631	4819.9	21225.3	4803	26440.2	31564.3	25907.7	7464	46812.6	32466.4	11400.2	35340.3	64313.6	30275.4	15934	8775.1	25776.6
Southeast	2698791.1	96639.5	101836	31070.1	122508	34580.4	165646	240584	133426	51847.3	408165	46801	75241.4	208153	399323	209915	99400.7	66680.7	191066	
Southwest	1854169.4	46937.7	54617.1	14342.7	9780.5	33336.3	13787.4	80497.5	112493	62139.6	15587.7	207440	162122	34615	105679	166580	98139	54939.8	35151.1	114014
Total: 12613925.9 by Description:	393920.6	425658.2	125368.6	148177.1	519400.7	194983.1	1015194.8	1091469.2	734241.1	257676.5	1754075.2	297077.2	322777.3	1035285.4	190821.6	638375.3	414488.7	275066.2	862539.1	

Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10	k11	k12	k13	k14	k15	k16	k17	k18	k19								
1	1.11640	0.96380	0.93740	0.93080	0.97385	1.0805	0.99062	1.00924	0.94274	1.07661	0.92141	0.6902	1.17687	0.86097	1.1783	0.98462	1.08132	0.78240	0.9076	0.5157	0.86374	0.7782	1.02083	1.01950	0.72970	0.87990	0.8094
2	0.99762	0.98820	0.97469	0.92244	0.9937	1.02366	1.00177	1.04826	0.98560	0.98440	0.99516	1.02640	0.99742	1.00511	1.00483	1.00069	1.00245	1.00394	0.99810	0.97240	0.99982	1.00131	1.00130	0.99870	0.99745	0.99803	0.98047
3	0.99940	0.99865	0.99930	0.99917	0.99997	1.00081	1.0001	1.00169	0.99994	0.99940	0.99979	1.0001	0.9999	1.0002	1.00018	1.00033	1.00029	1.00015	0.99993	0.99870	0.99999	1.00005	1.00005	0.99995	0.99999	0.99996	0.99994
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Result:	1.11911	0.95891	0.9125	0.91572	0.96764	1.10707	0.99248	1.0598	0.94133	1.0859	1.01625	0.69209	1.17371	0.86595	1.18422	0.98533	1.08407	0.82650	0.90583	0.50084	0.86358	1.07928	1.02229	1.01823	0.97039	0.87993	0.97938

Result - color coded target matrix and balancing matrix:

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Report Scenario: 2a: Starting Matrix of aggregated field to balance for sums of rows and columns of the Target Matrix of the aggregated field

2a: Starting Matrix of aggregated field to balance for sums of rows and columns of the Target Matrix of the aggregated field

Enter:

Matrix rows by: GeoName | columns by: Description

Matrix items by field1: col2021Q1 | aggregation function: Sum

Iterations by the field2: col2021Q1 | aggregation function: Sum

(2a) Balancing matrix of field1 for the sums by rows and by columns of the matrix of field2

Balancing for sum of rows and columns of the starting matrix for sum values of the field1 'col2021Q1' and the target matrix for sum values of the field2 'col2021Q1'

yes, balancing, precision: 0.3187, steps: 5, maximum difference of cells in balancing and target matrix = 10648.59, maximum difference of cells in balancing and starting matrix = 315718.39

GeoName	Sum of Sum of col2021Q1 by GeoName	Accommodation and food services	Administrative and support and waste management and remediation services	Agriculture, forestry, fishing and hunting	Arts, entertainment, and recreation	Construction	Educational services	Finance and insurance	Health care and social assistance	Information and communication	Manufacturing and construction	Mining, quarrying, and oil and gas extraction	Other services (except government and technical services)	Professional, scientific, and technical services	Real estate and rental and leasing	Retail trade	Transportation and warehousing	Utilities	Wholesale trade	
Far West	3982092.1	134008	137605	55762.3	37515	186129	38011	224625	28645	452972	70307.8	446992	199187	73380.2	374099	758952	274690	120357	60627	1229296
Great Lakes	2628446.7	66861.39	94079.7	31735.8	19837.2	115290	29957.6	264921	239052	85344.7	66757.2	496785	158115	59724	190428	344308	175431	87739.7	53089.5	192406
Midwest	3398738.5	77137.4	112283	0	28509.8	138263	72500.6	515689	311068	275228	82919.2	258666	0	79997.2	360337	344308	191878	88931.5	61788.8	198954
New England	1042737.3	31440.9	34789.1	0	7366.6	42040.1	29307.2	125912	105594	59535.8	26247.2	115181	0	20559.3	121080	166569	61426.6	18677.4	18785.5	59125.6
Plains	1230298.4	30099.5	36713.3	52984.7	8524.3	55597.2	12479.7	135403	116928	44466.8	36065.1	187223	11910	27292.2	78275.6	151441	82819.6	44839.1	25515	391701
Rocky Mountain	708422.5	23384.2	25168	11344.7	7038.4	50820.3	7859.6	52444.6	51652.1	41239.2	13611.6	67401.2	22563.4	16901	64557.5	115977	52670.4	27428.9	11798.4	44542
Southeast	4099881.8	139972	173556	35836	35756.5	220772	44045.5	315740	354623	176141	90981.9	565942	27767.5	100348	338156	630143	315782	145952	90065.4	299301
Southwest	2267706.8	71898.2	97206.9	14464.1	13289.1	131506	19869.6	170006	174653	92266.9	34771.8	305766	143151	45284.8	185567	288489	160224	87246.4	46625	180412
Total: 19358324.1 by Description:	573457.99	711421.01	201737.61	157836.91	940417.59	254031.81	1805440.59	1640165.11	1227194.4	421661.8	2443956.2	241122.1	427486.7	1712500.11	3000468	1314921.6	620272	368495	1295737.6	

GeoName	Sum of Sum of col2021Q1 by GeoName	Accommodation and food services	Administrative and support and waste management and remediation services	Agriculture, forestry, fishing and hunting	Arts, entertainment, and recreation	Construction	Educational services	Finance and insurance	Health care and social assistance	Information and communication	Manufacturing and construction	Mining, quarrying, and oil and gas extraction	Other services (except government and technical services)	Professional, scientific, and technical services	Real estate and rental and leasing	Retail trade	Transportation and warehousing	Utilities	Wholesale trade	
Far West	3982092.1	134279.44	144313.11	64420.9	42475.58	184806.63	42436.18	258122.47	29079.37	346503.41	68110.17	478404.58	33334.64	383169.79	73801.39	273217.06	119209.45	60481.3	235448.22	
Great Lakes	2628446.7	66861.39	96148.63	25742.06	19648.22	112636.2	33082.22	254441.48	244338.34	107729.73	70425.85	461432.23	6424.29	59618.5	196955.97	365018.76	176474.59	89110.84	52060.44	196297.07
Midwest	3398738.6	81097.17	111565.69	0	30487.22	139797.46	65829.48	510627.7	294189.16	271685.23	83769.98	274887.78	0	73485.15	356332.42	548592.54	192150.77	76070.14	63037.17	203688.58
New England	1042737.3	31440.9	32295.67	0	7678	41988.99	27086.33	138539.31	104253.54	60007.16	24590.58	115957.2	0	19598.71	106797.31	175584.23	62347.45	17759.9	16897.36	83041.99
Plains	1230298.4	30451.84	37319.36	40031.2	6118.48	59894.86	13535.98	136685.48	113177.22	62875.52	38230.45	172365.31	5933.91	26991.74	76750.61	157673.03	84228.98	48218.07	24119.48	93766.89
Rocky Mountain	708422.5	22040.75	24882.16	11449.11	5667.53	42326.04	7063.12	53197.63	52840.97	47177.78	13729.52	72044.73	27631.87	16726.57	64803.52	111704.82	52375.53	26270.3	13059.11	42891.41
Southeast	4099881.8	138559.71	188434.06	36387.69	32752.49	219012.25	45889.04	298782.13	361066.99	220311.91	85498.01	653146.53	36768.98	98968.63	342182.02	621784.02	31599.72	148918.3	88162.16	285019.32
Southwest	2267706.8	71862.88	96462.33	23706.66	11009.39	139997.26	19409.46	155044.59	160279.71	109563.65	37307.24	305617.83	132088.42	48618.95	165508.47	280299.19	162527.5	86710.97	60078.01	101614.12
Total: 19358324.1 by Description:	573457.99	711421.01	201737.61	157836.91	940417.59	254031.81	1805440.59	1640165.11	1227194.39	421661.8	2443956.19	241122.11	427486.69	1712500.11	3000468.01	1314921.61	620272.01	368495.02	1295737.61	

The mouse-over tool tip shows comparison to other two matrices:

Country	Sum of Sum of MarketCap by Country	Basic Industries	Capital Goods	Consumer Durables	Consumer Non-Durables	Consumer Services	Energy	Finance	Health Care	Miscellaneous	Public Utilities	Technology	Transportation
Argentina	101204143336	0	55365384	84052984	0	0	90963402752	167747936	309262016	0	4007403264	0	0
Australia	57208868980	0	33516443036	0	0	33939300	164428005376	68343600128	2119059840	0	0	0	0
Bahamas	850392924	0	0	0	0	850392924	0	0	0	0	0	0	0
Belgium	142223452928	831817984	0	0	0	135144003072	0	0	4061531904	0	0	0	186999968
Bermuda	207582397900	156445048	0	0	0	28535570432	3608371968	6761208848	21693900	3355219984	0	0	5332136960
Brazil	52104534856	812759168	14719672052	2754530048	0	458386880	499699920	75731214336	23501630688	0	1671769894	33143508992	17615506416
Canada	18127513592	9533036400	177264425472	26307041536	7900739840	2479956772	292021712	13529624192	560891504	2751096676	8659261088	16281711336	9608668480
Cayman Islands	66447047680	1845740032	0	0	0	0	0	0	539113216	3432340480	0	0	116599968
Chile	50049250304	0	12467399680	0	0	382048920	0	0	1906890480	0	0	0	1468690224
China	1488450991296	12449652736	6420912128	810084032	0	6643612832	61267562496	34869362624	11881255872	22836742144	532369917952	8086710016	174835302400
Colombia	3525753880	0	687400032	0	0	0	27424000768	6948990000	0	0	0	0	30944739328
Costa Rica	1741410048	0	0	0	0	0	0	0	0	0	0	0	1741410048
Curacao	198631008	0	0	0	0	0	0	0	745971008	0	0	0	1240160000
Cyprus	1400891456	0	0	0	0	0	10974400512	0	0	0	0	0	2206219984
Denmark	246052457696	0	0	140791008	0	0	0	0	0	245911566688	0	0	0
Finland	32622000128	0	0	0	0	0	0	0	0	0	0	0	32622000128
France	32265080768	0	0	0	0	0	525758016	155638398976	132995179520	0	30364600320	4761723904	0
Germany	38696240340	2446519904	511581000	0	0	0	0	0	26082069192	168973654272	0	0	0
Greece	6511082172	0	0	0	0	0	0	0	0	0	0	0	76571800
Guernsey	9863669760	0	0	0	0	0	0	0	0	0	0	0	9863669760
Hong Kong	4217926024	0	0	0	0	0	728921164	1071476464	7842374414	50116200	0	0	0
India	365571453096	110841000	1473239912	0	0	0	0	0	19271897152	10557700224	350320000	1204899968	138819796992
Indonesia	2186300064	0	0	0	0	0	0	0	0	0	0	0	2186300064
Ireland	48540037760	18368972800	0	16310308672	0	0	0	0	38484992	5850538032	20199199632	20034808064	2500939880
Isle of Man	5221000	0	0	0	0	0	0	0	0	0	0	0	5221000
Israel	17455703480	1433445608	9341835264	1764971104	154919008	361943168	133266880	0	2078329984	26025318912	0	2831799968	10144057984
Italy	4192040096	0	0	0	175200992	0	0	0	41745199104	0	0	0	0
Japan	645002204400	0	0	30431818472	0	127451996160	38620400	0	188656402432	0	24536999936	0	0
Jersey	2020072336	234955008	0	0	0	0	0	0	0	9090000096	0	0	0
Jordan	460231008	0	0	0	0	0	0	0	0	0	0	0	460231008
Kazakhstan	3752849920	0	0	0	0	0	0	0	3752849920	0	0	0	0
Luxembourg	113853430584	1050070016	57095651328	8357210112	0	0	41895091396	0	131835000	0	4294409984	588350008	0
Macau	74005904	0	0	0	0	74005904	0	0	0	0	0	0	0
Malta	660490016	0	0	0	0	0	198923000	0	461567008	0	0	0	0
Mexico	200872156000	0	373090048	11974700032	0	44823989676	9728249200	0	0	0	0	0	10873449668
Monaco	1160700	0	0	0	0	0	0	0	0	0	0	0	1160700
Netherlands	60834180032	18677299200	35691520000	8967149568	0	0	4145149952	1628359936	5802639336	7272675968	9572429020	2991010048	96280725504
New Zealand	484470016	0	0	0	0	0	0	0	0	0	0	0	0
Norway	65412521712	0	0	0	0	0	0	0	63993499648	0	254902000	0	1164120064
Panama	3736197954	204	0	0	0	0	0	0	0	0	0	0	3736197954
Peru	1262890712	0	0	218750016	578328000	0	0	0	0	0	0	0	0
Philippines	525879936	0	0	0	0	0	0	0	0	0	0	0	525879936
Portugal	19152994	0	0	0	0	0	0	0	0	0	0	0	19152994
Puerto Rico	676167874	0	0	0	0	0	0	0	3660819968	0	0	0	1008559904
Russia	828124976	0	576145024	0	0	0	0	0	131899984	0	0	0	791379968
Singapore	1961392364	0	50449000	0	0	0	0	0	1219608096	636409074	208194692	1306718072	981487992

Country	Sum of Sum of MarketCap by Country	Basic Industries	Capital Goods	Consumer Durables	Consumer Non-Durables	Consumer Services	Energy	Finance	Health Care	Miscellaneous	Public Utilities	Technology	Transportation
Argentina	101204143336	0	55365384	84052984	0	0	90963402752	167747936	309262016	0	4007403264	0	0
Australia	57208868980	0	33516443036	0	0	33939300	164428005376	68343600128	2119059840	0	0	0	0
Bahamas	850392924	0	0	0	0	850392924	0	0	0	0	0	0	0
Belgium	142223452928	831817984	0	0	0	135144003072	0	0	4061531904	0	0	0	186999968
Bermuda	207582397900	156445048	0	0	0	28535570432	3608371968	6761208848	21693900	3355219984	0	0	5332136960
Brazil	52104534856	812759168	14719672052	2754530048	0	458386880	499699920	75731214336	23501630688	0	1671769894	33143508992	17615506416
Canada	18127513592	9533036400	177264425472	26307041536	7900739840	2479956772	292021712	13529624192	560891504	2751096676	8659261088	16281711336	9608668480
Cayman Islands	66447047680	1845740032	0	0	0	0	0	0	539113216	3432340480	0	0	116599968
Chile	50049250304	0	12467399680	0	0	382048920	0	0	1906890480	0	0	0	1468690224
China	1488450991296	12449652736	6420912128	810084032	0	6643612832	61267562496	34869362624	11881255872	22836742144	532369917952	8086710016	174835302400
Colombia	3525753880	0	687400032	0	0	0	27424000768	6948990000	0	0	0	0	30944739328
Costa Rica	1741410048	0	0	0	0	0	0	0	0	0	0	0	1741410048
Curacao	198631008	0	0	0	0	0	0	0	745971008	0	0	0	1240160000
Cyprus	1400891456	0	0	0	0	0	10974400512	0	0	0	0	0	2206219984
Denmark	246052457696	0	0	140791008	0	0	0	0	0	245911566688	0	0	0
Finland	32622000128	0	0	0	0	0	0	0	0	0	0	0	32622000128
France	32265080768	0	0	0	0	0	525758016	155638398976	132995179520	0	30364600320	4761723904	0
Germany	38696240340	2446519904	511581000	0	0	0	0	0	26082069192	168973654272	0	0	0
Greece	6511082172	0	0	0	0	0	0	0	0	0	0	0	76571800
Guernsey	9863669760	0	0	0	0	0	0	0	0	0	0	0	9863669760
Hong Kong	4217926024	0	0	0	0	0	728921164	1071476464	7842374414	50116200	0	0	0
India	365571453096	110841000	1473239912	0	0	0	0	0	19271897152	10557700224	350320000	1204899968	138819796992
Indonesia	2186300064	0	0	0	0	0	0	0	0	0	0	0	2186300064
Ireland	48540037760	18368972800	0	16310308672	0	0	0	0	38484992	5850538032	20199199632	20034808064	2500939880
Isle of Man	5221000	0	0	0	0	0	0	0	0	0	0	0	5221000
Israel	17455703480	1433445608	9341835264	1764971104	154919008	361943168	133266880	0	2078329984	26025318912	0	2831799968	10144057984
Italy	4192040096	0	0	0	175200992	0	0	0	41745199104	0	0	0	0
Japan	645002204400	0	0	30431818472	0	127451996160	38620400	0	188656402432	0	24536999936	0	0
Jersey	2020072336	234955008	0	0	0	0	0	0	0	9090000096	0	0	0
Jordan	460231008	0	0	0	0	0	0	0	0	0	0	0	460231008
Kazakhstan	3752849920	0	0	0	0	0	0	0	3752849920	0	0	0	0
Luxembourg	113853430584	1050070016	57095651328	8357210112	0	0	41895091396	0	131835000	0	4294409984	588350008	0
Macau	74005904	0	0	0	0	74005904	0	0	0	0	0	0	0
Malta	660490016	0	0										

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Data for report: ShowByFilmByCategoryByTheater

Start Time: All | Category Name: All | Theater: All | Rating: All | Review Score: All | Title: All | Apply

Records returned: 102

ID	Category/Description	Length	Playing	Now/Rating	Tickets Sold	Title	ID1	Category Name	Review Score	ID2	Film	Start Time	Theater	ID3	Adult Price	Child Price	Theater Name
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	19114	21.30.00	6	6	7.75	6.25		Loews Cambridge
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	19914	17.00.00	8	8	6.75	5.25		Cambridge Multiplex
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	20715	12.05.00	7	7	6.75	5.25		General Cinema Downtown
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	21415	18.15.00	8	8	6.75	5.25		Cambridge Multiplex
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	19214	12.10.00	7	7	6.75	5.25		General Cinema Downtown
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	20014	19.20.00	8	8	6.75	5.25		Cambridge Multiplex
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	20815	14.10.00	7	7	6.75	5.25		General Cinema Downtown
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	21615	20.20.00	8	8	6.75	5.25		Cambridge Multiplex
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	19314	14.30.00	7	7	6.75	5.25		General Cinema Downtown
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	20114	21.40.00	8	8	6.75	5.25		Cambridge Multiplex
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	20915	16.15.00	7	7	6.75	5.25		General Cinema Downtown
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	19414	16.50.00	7	7	6.75	5.25		General Cinema Downtown
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	20215	12.10.00	6	6	7.75	6.25		Loews Cambridge
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	21015	18.20.00	7	7	6.75	5.25		General Cinema Downtown
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	18714	12.10.00	6	6	7.75	6.25		Loews Cambridge
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	19514	19.10.00	7	7	6.75	5.25		General Cinema Downtown
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	20315	14.15.00	6	6	7.75	6.25		Loews Cambridge
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	21115	20.25.00	7	7	6.75	5.25		General Cinema Downtown
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	18814	14.30.00	6	6	7.75	6.25		Loews Cambridge
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	19614	21.30.00	7	7	6.75	5.25		General Cinema Downtown
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	20415	16.20.00	6	6	7.75	6.25		Loews Cambridge
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	21215	12.00.00	8	8	6.75	5.25		Cambridge Multiplex
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	18914	16.50.00	6	6	7.75	6.25		Loews Cambridge
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	19714	12.20.00	8	8	6.75	5.25		Cambridge Multiplex
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	20515	18.25.00	6	6	7.75	6.25		Loews Cambridge
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	21315	14.45.00	8	8	6.75	5.25		Cambridge Multiplex
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	19014	19.10.00	6	6	7.75	6.25		Loews Cambridge
144	A whifwlnvd tale of one man's search for truth	120	True	PG	43000	The Santa Fe Conspiracy	4	Action	4	19814	14.40.00	8	8	6.75	5.25		Cambridge Multiplex
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	20615	20.30.00	6	6	7.75	6.25		Loews Cambridge
154	A humorous face of scandal amid the search for self identity	105	True	PG-1	8000	An Invisible Attitude	4	Action	4	21415	16.10.00	8	8	6.75	5.25		Cambridge Multiplex

1 2 3 4

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The sum of tickets sold is in balance with review scores:

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ShowByFilmByCategoryByTheater - Advanced Analytics - Matrix Balancing

Select Scenario: 2a Starting Matrix of aggregated field1 to balance for sums of rows and columns of the Target Matrix of the aggregated field2 | Steps: 100 | Precision: 1 | Partial rows/columns: 0.0 | #adjust by start

Enter: Starting Matrix of aggregated field1 to balance for sums of rows and columns of the Target Matrix of the aggregated field2

Matrix rows by: CategoryName | columns by: TheaterName

Matrix items by field: TicketsSold | aggregation function: Sum

Iterations by field: ReviewScore | aggregation function: Sum

(2a) Balancing matrix of field1 for the sums by rows and by columns of the matrix of field2

Balancing for sum of rows and columns of the starting matrix for sum values of the field1 'TicketsSold' and the target matrix for sum values of the field2 'ReviewScore':
Balancing, precision: 0.84487, steps: 11, maximum difference of cells in balancing and target matrix = 1.17, maximum difference of cells in balancing and starting matrix = 437961.00

CategoryName	Sum of Sum of TicketsSold by CategoryName	Cambridge Multiplex	General Cinema Downtown	Loews Cambridge	Downtown Multiplex	Boston Multiplex	General Cinema Boston	General Cinema Cambridge	Loews Downtown
Action	76000	255000	85000	255000	0	0	0	0	0
Comedy	240000	0	80000	80000	80000	0	0	0	0
Drama	1475000	0	250000	430000	430000	35000	188000	35000	35000
Thriller	26000	0	0	0	25000	0	25000	25000	0
Total: 2499000	Sum of Sum of TicketsSold by TheaterName:	255000	385000	773000	518000	60000	188000	60000	60000

CategoryName	Sum of Sum of ReviewScore by CategoryName	Cambridge Multiplex	General Cinema Downtown	Loews Cambridge	Downtown Multiplex	Boston Multiplex	General Cinema Boston	General Cinema Cambridge	Loews Downtown
Action	120	40	40	40	0	0	0	0	0
Comedy	30	0	10	10	10	0	0	0	0
Drama	165	0	20	40	40	15	20	15	15
Thriller	60	0	0	0	0	20	0	20	20
Total: 375	Sum of Sum of ReviewScore by TheaterName:	40	70	90	50	35	20	35	35

Steps	k1	k2	k3	k4	k5	k6	k7	k8	Precision
1	1.045330	0.833	0.774885	0.3312	1	0.885290	0.891710	0.820611	1.454110
2	1.08003	1.154911	1.094910	0.80771	0.826670	0.913150	0.913190	0.905101	3.217610
3	1.089721	0.981021	0.826330	0.76656	0.917670	0.931510	0.937350	0.96431	2.908310
4	1.077121	0.844411	0.13360	0.82656	0.928350	0.949970	0.957540	0.977991	1.309410
5	1.058829	1.040710	1.000360	0.88422	0.944650	0.965230	0.9721	0.9923	1.080730
6	1.041431	0.242510	0.991130	0.3253	0.960220	0.978540	0.981080	0.984691	0.449910
7	1.028131	0.144650	0.995680	0.96230	0.972640	0.964460	0.988281	0.005910	0.031241
8	1.018651	0.008950	0.996440	0.9697	0.981690	0.988820	0.992431	1.001061	0.109691
9	1.012211	0.005550	0.997390	0.98069	0.987940	0.993380	0.995121	1.009961	0.0125
10	1.007931	0.003480	0.998190	0.98766	0.992130	0.995190	0.996861	1.000731	0.007961
11	1.005131	0.0022	0.998790	0.9921	0.9949	0.997230	0.997981	1.000521	0.005091
12	1.003311	0.0014	0.9992	0.99493	0.9967	0.998220	0.9987	1.000351	0.003261
13	1.002131	0.000890	0.999480	0.99675	0.997870	0.998890	0.999161	1.000231	0.002091
14	1.001311	0.000570	0.999680	0.9979	0.998620	0.999260	0.999461	1.000151	0.001341
15	1.000881	0.000370	0.999780	0.99866	0.999120	0.999520	0.999651	1.000011	0.000861
16	1.000571	0.000240	0.999860	0.99914	0.999430	0.999690	0.999781	1.000061	0.000551
17	1.000361	0.000150	0.999910	0.99945	0.999640	0.99988	0.999981	1.000041	0.000361

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Records returned: 141116

SC_Group_ID	SC_Group_Desc	SC_GroupCommod_ID	SC_GroupCommod_Desc	SC_Geography_ID	SortOrder	SC_GeographyIdentified_Desc	SC_Commodity_ID	SC_Commodity_Desc	SC_Attribute_ID	SC_Attribute_Desc	SC_Unit_ID	SC_Unit_Desc	Year_ID	SC_Frequency_ID	SC_Frequency_Desc	TimePeriod
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	1	Monthly	1
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	1	Monthly	2
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	1	Monthly	3
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	1	Monthly	4
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	1	Monthly	5
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	1	Monthly	6
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	1	Monthly	7
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	1	Monthly	8
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	1	Monthly	9
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	1	Monthly	10
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	1	Monthly	11
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	1	Monthly	12
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1989	3	Annual	19
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1990	1	Monthly	1
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric tons	1990	1	Monthly	2
3	Exports and	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S. from specified source	7	1,000 metric	1990	1	Month	3

Parameters and starting matrix:

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Feed Grain Export and Import - Advanced Analytics - Matrix Balancing

Select Scenario: 2b. Balancing matrix of aggregated field1 for iterations of starting and target values of the field2

2b: The starting value of field2 to get the Starting matrix of field1 values and target value of field2 to get Target matrix

Enter:

Matrix rows by: SC_GeographyIdentified_Desc columns by: SC_GroupCommod_Desc

Matrix items by field: Amount aggregation function: Sum

Iterations by the field: Year_ID starting value: 1994 and target value: 2022

(2b) Balancing matrix of aggregated field1 for iterations of starting and target values of the field2

(2c) Balancing coefficients for matrix of field1 values and all iterations between starting and target of the field2 values

Balancing for sum of rows and columns for sum of values of the field1 'Amount' in the starting matrix and for sum of the field2 = 1994 and the target matrix for sum of field2 = 2022

Balanced, precision: 0.11243, steps: 3, maximum difference of cells in balancing and target matrix = 19198.19, maximum difference of cells in balancing and starting matrix = 19198.19

Starting Matrix of Sum of Amount where Year_ID=1994										Target Matrix of Sum of Amount where Year_ID=2022									
SC_GeographyIdentified_Desc	Sum of Sum of Amount by SC_GroupCommod_Desc	Barley	Byproduct feeds	Corn	Oats	Sorghum	SC_GeographyIdentified_Desc	Sum of Sum of Amount by SC_GroupCommod_Desc	Barley	Byproduct feeds	Corn	Oats	Sorghum						
European Union-15	1348825.25	16530.53	32604.87	13381860.14	36367.71	22162	European Union-15	1348825.25	16530.53	32604.87	13381860.14	36367.71	22162						
South Asia	8659658.78	60.7	2382.51	8656730.53	0	505.04	South Asia	8659658.78	60.7	2382.51	8656730.53	0	505.04						
Southeast Asia	5763332.67	884.84	56728.48	5706329.33	194.45	368.87	Southeast Asia	5763332.67	884.84	56728.48	5706329.33	194.45	368.87						
Caribbean	10550463.6	4209.46	2121.71	10543205.89	798.3	128.24	Caribbean	10550463.6	4209.46	2121.71	10543205.89	798.3	128.24						
Central America	6475466.9	327.39	0	6474475.57	449.04	214.9	Central America	6475466.9	327.39	0	6474475.57	449.04	214.9						
European Union-25	13741298.19	19166.22	32606.06	13630146.21	37123.5	22254.2	European Union-25	13741298.19	19166.22	32606.06	13630146.21	37123.5	22254.2						
Middle East	14620255.35	36749.91	22477.34	14552450.56	109.12	8468.42	Middle East	14620255.35	36749.91	22477.34	14552450.56	109.12	8468.42						
North Africa	831129.99	8391.61	0	821191.52	0	1546.86	North Africa	831129.99	8391.61	0	821191.52	0	1546.86						
North America	42451347.06	191580.71	86318.35	41795412.43	226590.43	151045.14	North America	42451347.06	191580.71	86318.35	41795412.43	226590.43	151045.14						
South America	63730761.56	2690.9	6804.64	63717396.7	960.6	2986.72	South America	63730761.56	2690.9	6804.64	63717396.7	960.6	2986.72						
Sub-Saharan Africa	3754450.86	8298.89	78.24	3733972.69	301.66	19889.58	Sub-Saharan Africa	3754450.86	8298.89	78.24	3733972.69	301.66	19889.58						
Africa	4584111.11	9620.31	8590.97	4556164.21	319.18	20416.44	Africa	4584111.11	9620.31	8590.97	4556164.21	319.18	20416.44						
Asia and Middle East	43341021.56	77089.71	171163.02	4298320.78	1469.82	162976.23	Asia and Middle East	43341021.56	77089.71	171163.02	4298320.78	1469.82	162976.23						
Europe/Eurasia	14424164.41	19664.85	32656.89	14311439.72	37515.3	22887.65	Europe/Eurasia	14424164.41	19664.85	32656.89	14311439.72	37515.3	22887.65						
Oceania	517091.66	194.88	0	515551.1	528.09	817.86	Oceania	517091.66	194.88	0	515551.1	528.09	817.86						
Western Hemisphere	123216124.11	198008.46	103329.69	12253492.58	229198.38	154295	Western Hemisphere	123216124.11	198008.46	103329.69	12253492.58	229198.38	154295						
Latin America	8644276.65	56648.35	70228.36	86158824.55	5596.14	153079.25	Latin America	8644276.65	56648.35	70228.36	86158824.55	5596.14	153079.25						
World	344387400362.43	1159570666.82	318686.59	303096825597.26	1656026199.34	1426129212.42	World	344387400362.43	1159570666.82	318686.59	303096825597.26	1656026199.34	1426129212.42						
Total: 344844003647.86	Sum of Sum of Amount by SC_GroupCommod_Desc:	11596342514.54	945755.72	30323839065.77	1566100421.06	1426187286.05	Total: 344844003647.86	Sum of Sum of Amount by SC_GroupCommod_Desc:	11596342514.54	945755.72	30323839065.77	1566100421.06	1426187286.05						

Balancing coefficients

Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10	k11	k12	k13	k14	k15	k16	k17	k18	k1	k2	k3	k4	k5	Precision
1	1	1	0.99995	1.00125	1	1.00015	1	1.00015	1	0.99967	0.99791	1	1.00412	1	1	1	1.0.02691	1	1	1	1	1	40586.64171	
2	0.99995	0.99999	0.9998	1	1	0.99995	0.99997	0.99996	1	0.99990	0.99950	0.99995	1	1	0.99980	0.99986	1	1	0.00041	1	1	1	2984.21742	
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6.33764	

Balancing Matrix of Sum of Amount

SC_GeographyIdentified_Desc	Sum of Sum of Amount by SC_GroupCommod_Desc	Barley	Byproduct feeds	Corn	Oats
European Union-15	1348825.25	16529.73	32379.01	13381189.74	36365.89
South Asia	8659676.92	60.7	2411.47	8656699.71	0

Balancing:

MatrixBalancingTool.docx • Saving...

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Matrix Balancing Scenarios

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Samples of the different data structure and scenar...

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 Report: Feed Grain Export and Import
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 Partial Matrix Balancing

Advanced Analytics | Google Charts

Feed Grain Export and Import - Advanced Analytics - Matrix Balancing

Target Matrix of Sum of Amount where Year_ID=2022

Target Matrix of Sum of Amount where Year_ID=2022

SC_GeographyIndented_Desc	Sum of Sum of Amount by SC_GeographyIndented_Desc	Barley	Byproduct feeds	Corn	Oats	Sorghum
North America	15150.71	8532.72	821191.52	226990.43	151045.14	15468.39
South America	63730761.56	2690.9	63717396.7	960.6	2906.72	151045.14
Europe/Asia	14424164.41	19664.85	14311439.72	37515.3	22887.65	151045.14
Africa	3752222.17	77085.71	3733972.69	301.66	18669.58	151045.14
Asia and Middle East	43341021.56	77085.71	42928320.78	1469.82	162978.23	151045.14
Oceania	122321624.11	19664.85	122530492.58	5596.14	153979.25	154295.8
Western Hemisphere	8644276.65	1159570666.82	318686.59	3028682592.56	1566426199.34	1426181780.9
World	344387400362.83	1159570666.82	318686.59	3028682592.56	1566426199.34	1426181780.9

3c Scenario samples:
 Partial Matrix Balancing

Page 18 of 40 | 3188 words | English (United States) | Text Predictions: On | Accessibility: Investigate | Display Settings | Focus | 150%

Advanced Analytics | Google Charts

Target Matrix of Sum of Amount where Year_ID=2021

Target Matrix of Sum of Amount where Year_ID=2021

SC_GeographyIndented_Desc	Sum of Sum of Amount by SC_GeographyIndented_Desc	Barley	Byproduct feeds	Corn	Oats	Sorghum
North America	15150.71	8532.72	821191.52	226990.43	151045.14	15468.39
South America	63730761.56	2690.9	63717396.7	960.6	2906.72	151045.14
Europe/Asia	14424164.41	19664.85	14311439.72	37515.3	22887.65	151045.14
Africa	3752222.17	77085.71	3733972.69	301.66	18669.58	151045.14
Asia and Middle East	43341021.56	77085.71	42928320.78	1469.82	162978.23	151045.14
Oceania	122321624.11	19664.85	122530492.58	5596.14	153979.25	154295.8
Western Hemisphere	8644276.65	1159570666.82	318686.59	3028682592.56	1566426199.34	1426181780.9
World	344387400362.83	1159570666.82	318686.59	3028682592.56	1566426199.34	1426181780.9

3c Scenario samples:
 Partial Matrix Balancing

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Advanced Analytics | Google Charts

Target Matrix of Sum of Amount where Year_ID=2021

Target Matrix of Sum of Amount where Year_ID=2021

SC_GeographyIndented_Desc	Sum of Sum of Amount by SC_GeographyIndented_Desc	Barley	Byproduct feeds	Corn	Oats	Sorghum
North America	15150.71	8532.72	821191.52	226990.43	151045.14	15468.39
South America	63730761.56	2690.9	63717396.7	960.6	2906.72	151045.14
Europe/Asia	14424164.41	19664.85	14311439.72	37515.3	22887.65	151045.14
Africa	3752222.17	77085.71	3733972.69	301.66	18669.58	151045.14
Asia and Middle East	43341021.56	77085.71	42928320.78	1469.82	162978.23	151045.14
Oceania	122321624.11	19664.85	122530492.58	5596.14	153979.25	154295.8
Western Hemisphere	8644276.65	1159570666.82	318686.59	3028682592.56	1566426199.34	1426181780.9
World	344387400362.83	1159570666.82	318686.59	3028682592.56	1566426199.34	1426181780.9

3c Scenario samples:
 Partial Matrix Balancing

Page 18 of 40 | 3188 words | English (United States) | Text Predictions: On | Accessibility: Investigate | Display Settings | Focus | 150%

2c Scenario samples:

Report: Sample Sales Records by year in our Analytics from <http://OUReports.com>
Data:

Interactive Reporting | eoureports.net/OUReports/ShowReport.aspx?rid=0

Online User Reporting

Data for report: Sample Sales Records by year

Records returned: 100

OrderYear	Region	Country	Item Type	Sales Channel	Order Priority	Name	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	Index
2010	Australia and Oceania	Tuvalu	Baby Food	Offline	H	0	5/28/2010	669166000/6/27/2010	9525	255.28	159.42	2533650	1582240	951410	1	
2012	Central America and the Caribbean	Grenada	Cereal	Online	C	0	6/22/2012	963881000/9/15/2012	2804	206.7	117.11	576783	328376	248406	2	
2014	Europe	Russia	Office Supplies	Offline	L	0	5/2/2014	341417000/5/2/2014	1179	69.21	524.96	115690	93394	22499	3	
2014	Sub-Saharan Africa	Sao Tome and Principe	Fruits	Online	C	0	6/20/2014	514322000/7/5/2014	8102	9.33	6.92	76591.7	56065.8	19526.8	4	
2013	Sub-Saharan Africa	Rwanda	Office Supplies	Offline	L	0	2/12/2013	115457000/2/6/2013	5062	651.21	524.96	3296420	267350	639078.5	5	
2015	Australia and Oceania	Solomon Islands	Baby Food	Online	C	0	2/4/2015	547996000/2/12/2015	2974	255.28	159.42	759203	474115	285088	6	
2011	Sub-Saharan Africa	Angola	Household	Offline	M	0	4/23/2011	135435000/4/27/2011	4187	668.27	502.54	2796050	2104140	693912	7	
2012	Sub-Saharan Africa	Burkina Faso	Vegetables	Online	H	0	7/17/2012	871544000/7/27/2012	8082	154.06	90.93	1245110	73496	510217	8	
2015	Sub-Saharan Africa	Republic of the Congo	Personal Care	Offline	M	0	7/14/2015	770463000/8/25/2015	6070	81.73	56.67	496101	34387	162114	9	
2014	Sub-Saharan Africa	Senegal	Cereal	Online	H	0	4/18/2014	616697000/5/30/2014	6593	205.7	117.11	1356100	72106	564974	10	
2011	Asia	Kyrgyzstan	Vegetables	Online	H	0	6/24/2011	814712000/7/12/2011	124	154.06	90.93	19103.4	11273.3	7828.12	11	
2014	Sub-Saharan Africa	Cape Verde	Clothes	Offline	H	0	8/2/2014	939826000/8/19/2014	4168	109.28	35.84	456479	149381	306998	12	
2017	Central America and the Caribbean	Honduras	Clothes	Online	L	0	1/13/2017	187311000/3/1/2017	8263	109.28	35.84	902961	296146	606835	13	
2017	Central America and the Caribbean	Honduras	Household	Offline	H	0	2/8/2017	622840000/2/13/2017	8974	668.27	502.54	5997060	4599790	1487260	14	
2014	Asia	Mongolia	Personal Care	Offline	C	0	2/19/2014	832401000/2/23/2014	4901	81.73	56.67	406559	27740	122819	15	
2012	Europe	Bulgaria	Clothes	Online	M	0	4/23/2012	972292000/6/3/2012	1673	109.28	35.84	182825	59960.3	122865	16	
2016	Asia	Sri Lanka	Cosmetics	Offline	M	0	11/19/2016	419124000/12/18/2016	6952	437.2	263.33	3039410	180670	1208740	17	
2015	Sub-Saharan Africa	Cameroon	Beverages	Online	C	0	4/1/2015	819821000/4/18/2015	5430	47.46	31.79	257654	17230	85033.8	18	
2010	Asia	Turkmenistan	Household	Offline	L	0	12/30/2010	441619000/1/20/2011	3830	668.27	502.54	2559470	1924730	634746	19	
2012	Australia and Oceania	East Timor	Meat	Online	L	0	7/31/2012	322068000/9/11/2012	5908	421.89	364.69	2492530	2154990	337939	20	
2014	Europe	Norway	Baby Food	Online	L	0	5/14/2014	819020000/6/28/2014	7450	255.28	159.42	1501840	1187600	714157	21	
2015	Europe	Portugal	Baby Food	Online	H	0	7/31/2015	860619000/9/3/2015	1273	255.28	159.42	324971	202942	122030	22	
2016	Central America and the Caribbean	Honduras	Snacks	Online	L	0	6/30/2016	795491000/7/26/2016	2225	152.58	97.44	339490	216804	122686	23	
2014	Australia and Oceania	New Zealand	Fruits	Online	H	0	9/8/2014	142278000/10/4/2014	2187	9.33	6.92	20404.7	15134	52970	24	
2016	Europe	Moldova	Personal Care	Online	L	0	5/7/2016	748140000/5/10/2016	5070	81.73	56.67	414371	287317	127054	25	
2017	Europe	France	Cosmetics	Online	H	0	5/22/2017	898533000/6/5/2017	1815	437.2	263.33	793518	477944	315574	26	
2014	Australia and Oceania	Kiribati	Fruits	Online	M	0	10/13/2014	347140000/11/10/2014	5398	9.33	6.92	50363.3	37364.2	13009.2	27	
2010	Sub-Saharan Africa	Mali	Fruits	Online	L	0	5/7/2010	689040000/5/10/2010	8822	9.33	6.92	54319.3	40288.2	14031	28	
2014	Europe	Norway	Beverages	Offline	C	0	7/16/2014	43565000/7/30/2014	5124	47.46	31.79	243134	162892	80241.8	29	
2012	Sub-Saharan Africa	The Gambia	Household	Offline	L	0	5/26/2012	886495000/6/9/2012	2370	668.27	502.54	1583800	1191020	392780	30	

Last imported from the file SampleSalesRecordsYear.csv on 7/18/2022 11:08:40 AM

Parameters, Starting Matrix, and Balancing Coefficients:

It balanced by 1000 steps with Precision equal 203 for 2016 and 248 for 2017:

Advanced Analytics | eoureports.net/OUReports/AdvancedAnalytics.aspx

Sample Sales Records by year - Advanced Analytics - Matrix Balancing

Select Scenario: 2b. Balancing matrix of aggregated field1 for iterations of starting and target values of the field2

Matrix rows by: Region | columns by: Item Type

Matrix items by field: TotalProfit | aggregation function: Sum

Iterations by the field: OrderYear | starting value: 2010 | and target value: 2017

(2b) Balancing matrix of aggregated field1 for iterations of starting and target values of the field2

(2c) Balancing coefficients for matrix of field1 values and all iterations between starting and target of the field2 values

Starting Matrix of Sum of Total Profit where Order Year=2010

Region	Sum of Sum of Total Profit by Region	Baby Food	Beverages	Cereal	Clothes	Cosmetics	Fruits	Household	Meat	Office Supplies	Personal Care	Snacks	Vegetables
Asia	2002016	0	0	0	0	0	0	0	0	0	0	0	0
Australia and Oceania	1963921	0	0	0	727423	0	0	0	0	0	0	0	0
Central America and the Caribbean	0	0	0	0	0	0	0	0	0	0	0	0	0
Europe	8006991.38	0	0	0	865416	9233492	0	0	1774188	0	133895.38	0	0
Middle East and North Africa	5134100	0	0	0	1028168	4105940	0	0	0	0	0	0	0
North America	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Saharan Africa	75112.5	0	0	0	0	0	0	75112.50	0	0	0	0	0
Total:	17162440.88	Sum of Sum of Total Profit by Item Type: 3238514	0	0	2620999	9339432	75112.50	0	1774188	133895.38	0	0	0

Balancing coefficients

Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10	k11	k12	Precision
2011	2.4403	1.1650	12803	45145	0	1E-05	0	613960	91522	0	1780	36867	0
2012	0.01887	0.0054	1192394	46824	0	32718	0.6924	355575	1650	3896959	52664	34.66840	0
2013	0.36273	0.70175	11469445	05008	0.29980	10306	0.00399	177290984	10619	2.3336	0	2.59319	0
2014	0.00103	0.00376	0.00051	0.13083	0	7092270	6729	33846731	62599	85.6121	16.12678	58.56244	18.77151
2015	3.24498	0.235920	7.82230	0.01796	92.34767	594.1504	0.56124	537861	53810	0.16482	0.15335	0.00032	3438083
2016	1103.97210	2.22707	65.55520	159810	10910.00474	1682767	65504	0.00059	0.74378	7.88392	0.78033	5.44536	0
2017	595.384890	4145748	355540	481470	0.00192	76065274	72199	0.00137	0	21.683930	3.11442	19.8621	3.641490

It balanced by 100000 steps with Precision = 1:

Sample Sales Records by year - Advanced Analytics - Matrix Balancing

Select Scenario: **Zb: Balancing matrix of aggregated field1 for iterations of starting and target values of the field2** matrix

Enter: Matrix rows by field: **Region** columns by: **ItemType**

Matrix sums by field: **TotalProfit** Aggregation function: **Sum**

Iterations by the field2: **OrderYear** starting value: **2010** and target value: **2017**

(Zb) Balancing matrix of aggregated field1 for iterations of starting and target values of the field2

(Zc) Balancing coefficients for matrix of field1 values and all iterations between starting and target of the field2 values

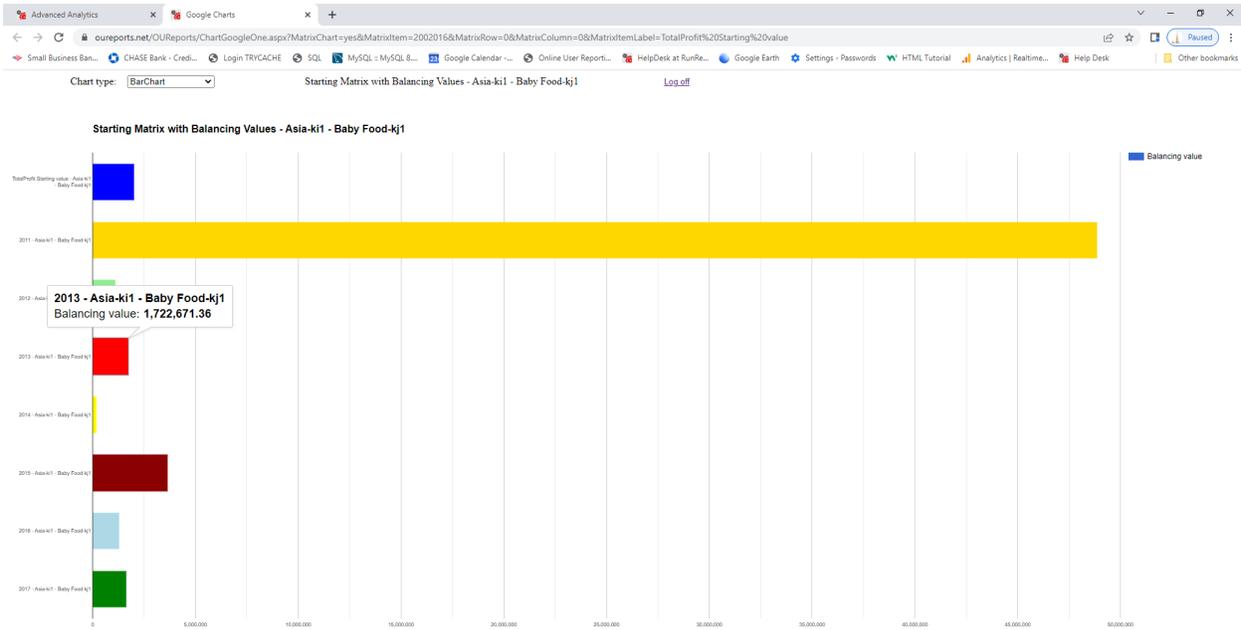
Starting Matrix of Sum of TotalProfit where OrderYear=2010

Region	Sum of Sum of TotalProfit by Region	Baby Food	Beverages	Cereal	Clothes	Cosmetics	Fruits	Household	Meat	Office Supplies	Personal Care	Snacks	Vegetables
Asia	2002916	0	0	0	0	0	0	0	0	0	0	0	0
Australia and Oceania	1963921	0	0	0	727423	0	0	0	0	0	0	0	0
Central America and the Caribbean	0	0	0	0	0	0	0	0	0	0	0	0	0
Europe	8066991.38	0	0	0	865418	0	0	0	0	1774188	133895.38	0	0
Middle East and North Africa	5134100	0	0	0	1028160	0	0	0	0	0	0	0	0
North America	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Saharan Africa	75112.5	0	0	0	0	0	75112.5	0	0	0	0	0	0
Total: 17182140.88	Sum of Sum of TotalProfit by ItemType:3238514	0	0	0	2620999.339432	0	75112.5	0	0	1774188	133895.38	0	0

Balancing coefficients

Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10	k11	k12	Precision										
2011	24403.165	0	12093.46145	0	1E-05	0	613960.91522	0	1780.36667	0	4660.60234	0	8284.35757	0.56935									
2012	0.01807	0.0054	1102394.48824	0.32178	0.06924	1355576.16587	36962589.52884	34.68944	0	35.85887	5.07041	1.96522	0	53.07385	6.473	5.84215	7.34555	0	19.58329	0.87677			
2013	0.96873	0.70175	11465445.05008	0.02968	0.10366	0.00395	172269584.16819	2.3336	0	2.59319	0	12.2882	0	0	0	9.87421	3.8072	0	0	0.91811			
2014	0.000103	0.00376	0.00051	0.13083	0	7092270.6729	32846731.62599	85.61212	16.12676	58.56244	18.77151	4.0409	0	41.56776	0	9.39374	0	0	0	0.92275			
2015	3.24498	-2.35992	0	7.82323	0.01796	92.34767	594.1504	0.56124	537661.5381	0	16482	0.15335	0.00032	3438083.06504	0	0.03197	0.92166	0	0	0.96888			
2016	2172.20154	0	0.1136549	980223	0.15689	0.1861	0.00465	194410883.18639	0.0003	0.75856	0.03868	0.79567	5.55387	0	0	0	4.44415	0.60426	0.88741	5.00831	0.99996		
2017	1116.44097	0	39927619.92476	0.46364	0	0.00185	73258308.02349	0.00073	0	22.51477	0	0	0	0	0	20.62313	3.78161	0	0	5.99642	8.72563	0	0.99996

Clicking on the link in the starting matrix cell for Asia & Baby Food, we open the chart showing the profit of Baby Food sales in Asia by year:



Report: Feed Grain Export and Import

Data has column Year_ID:

Interactive Reporting | Google Charts

oureports.net/OUReports/ShowReport.aspx?rld=0

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hide duplicate records Export delimiter: [] [Reset] Help for this page

Data for report: Feed Grain Export and Import Search: [] [] [Search]

Records returned: 141116

SC_Group_ID	SC_Group_Desc	SC_GroupCommod_ID	SC_GroupCommod_Desc	SC_Geography_ID	SortOrder	SC_GeographyIdentified_Desc	SC_Commodity_ID	SC_Commodity_Desc	SC_Attribute_ID	SC_Attribute_Desc	SC_Unit_ID	SC_Unit_Desc	Year_ID	SC_Frequency_ID	SC_Frequency_Desc	TimePeriod
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	1	Monthly	1
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	1	Monthly	2
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	1	Monthly	3
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	1	Monthly	4
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	1	Monthly	5
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	1	Monthly	6
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	1	Monthly	7
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	1	Monthly	8
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	1	Monthly	9
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	1	Monthly	10
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	1	Monthly	11
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	1	Monthly	12
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1989	3	Annual	19
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1990	1	Monthly	1
3	Exports and imports	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified source	7	1,000 metric tons	1990	1	Monthly	2
3	Exports and	9	Barley	30	58	European Union-15	1	Barley	19	Imports to U.S from specified	7	1,000 metric	1990	1	Monthly	3

Parameters and starting matrix:

Advanced Analytics | oureports.net/OUReports/AdvancedAnalytics.aspx

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Online User Reporting

Recalculate Analytics Correlation Data and Statistics Report and Charts List of User Dashboards Analytics Matrix Balancing Help OUReports Help Log off

Feed Grain Export and Import - Advanced Analytics - Matrix Balancing

Select Scenario: (b) Balancing matrix of aggregated field1 for iterations of starting and target values of the field2

Steps: 100 Precision: 1 Partial rows/columns: 0,0 # adjust by start

matrix (b) The starting value of field2 to get the Starting matrix of field1 values and target value of field2 to get Target matrix

Enter: Matrix rows by: SC_GeographyIdentified_Desc columns by: SC_GroupCommod_Desc

Matrix items by field1: Amount aggregation function: Sum

Iterations by the field2: Year_ID starting value: 1994 and target value: 2022

(b) Balancing matrix of aggregated field1 for iterations of starting and target values of the field2

(c) Balancing coefficients for matrix of field1 values and all iterations between starting and target of the field2 values

Done!

Starting Matrix of Sum of Amount where Year_ID='1994' Export to Excel

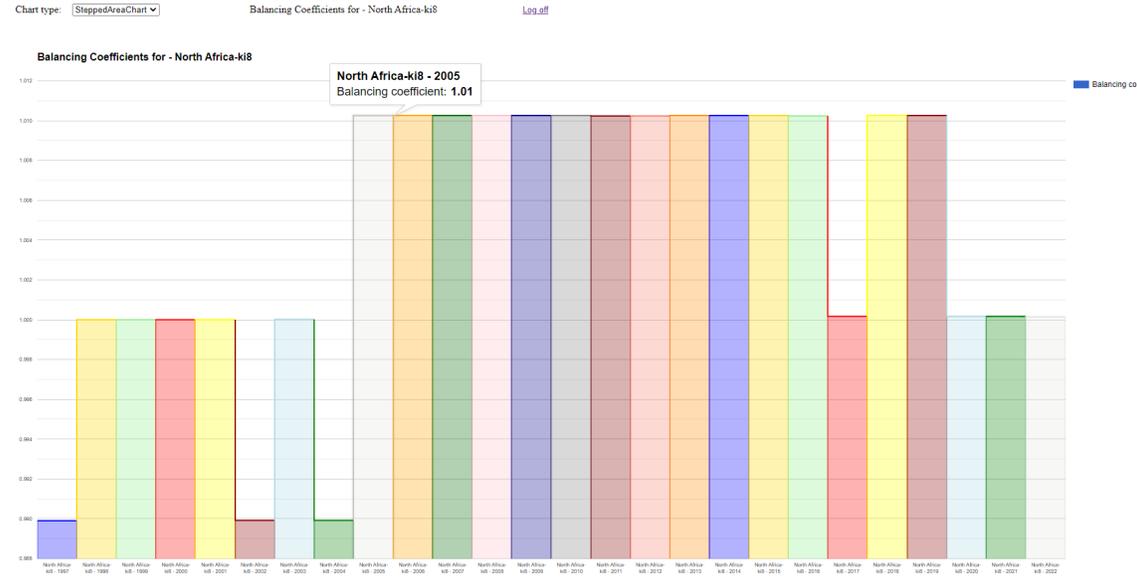
SC_GeographyIdentified_Desc	Sum of Sum of Amount by SC_GeographyIdentified_Desc	Barley	Byproduct feeds/Corn	Oats	Sorghum
European Union-15	13488525.25	16330.53	32694.87	13381868.14	36367.71
South Asia	865956.78	98.7	2362.51	865620.53	0
Southeast Asia	5763933.67	884.94	51726.48	5708225.33	194.45
Caribbean	10550463.6	4209.46	2121.71	10543205.89	798.3
Central America	847586.9	307.39	0	847415.57	144.14
European Union-25	13741288.49	18166.22	32666.06	13630148.21	37123.5
Middle East	14620255.35	36749.91	22477.34	14552458.56	108.12
North Africa	831129.99	8391.61	0	821191.62	0
North America	42451347.86	191159.71	86310.35	41725474.43	22699.43
South America	63730761.56	2690.9	6904.64	63712987.7	860.6
Sub-Saharan Africa	3754450.86	1228.69	78.24	3733972.69	301.66
Africa	4994111.11	9620.31	8690.97	4956184.21	310.18
Asia and Middle East	43340021.56	77099.71	171163.02	42903229.79	1489.62
Europe/Eurasia	14424164.41	19664.86	32666.89	14311433.72	37515.3
Oceania	517091.66	184.98	0	515651.1	528.09
Western Hemisphere	123216124.11	188068.86	103329.69	122538492.58	229198.38
Latin America	8644276.65	6548.35	7029.38	8618824.55	556.14
World	344387400362.43	1159570066.82	319666.59	302869825597.28	15669426199.34
Total: 34484400443.14	Sum of Sum of Amount by SC_GroupCommod_Desc:	11596342514.54	945755.72	303323839065.57	15661004121.06

Balancing coefficients

Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10/k11	k12	k13	k14	k15	k16	k17	k18	k19	k20	k21/k22	k23/k24	k25/k26	
1997	1.00006	1.00011	0.00231	1	1.00006	0.9985	0.9899	1.00005	1	1.00004	1.00009	1.00005	1	1.00002	1.00002	1	0.97221	1	0.11853				
1998	1.00004	1.00017	0.9998	1.00125	1.00004	0.99849	1	1.00004	1	0.99992	0.99996	1.00007	1.00004	0.99842	1.00001	1	0.98255	1	0.08806				
1999	1	0.99973	1	1	1.00125	1	1	1	1	0.9999	0.99806	1	1.00412	1	1	1	1.00002	1	0.04847				
2000	1	0.99967	1	1	1.00125	1	1	1	1	0.99998	0.99811	1	1.0057	1	1	1	1.00001	1	0.04431				
2001	1	0.99962	0.9974	0.9999	1	1.00125	1	1	1	0.99999	0.99819	1	1.00004	1.00004	1	1	0.99291	1	0.04962				

Region	Sum of Sum of Amount by SC_GroupCommod_Desc	2690.9	5804.64	63717398.7	950.6	2908.72
South America	63730761.56	2690.9	5804.64	63717398.7	950.6	2908.72
Sub-Saharan Africa	3754450.86	1228.69	78.24	2733972.69	301.66	18889.58
Africa	4594111.11	9620.31	6360.97	4554164.21	318.18	20116.48
Asia and Middle East	43341021.56	77089.71	171163.02	42920320.78	1459.82	162978.23
Europe/Eurasia	14424164.41	18664.88	32656.89	14311430.72	37515.3	22887.65
Oceania	517891.66	184.98	0	515651.1	528.09	817.49
Western Hemisphere	122216124.11	180898.46	103329.69	122330452.58	228198.38	154295
Latin America	86444276.65	56646.35	70228.36	86158824.55	5598.14	153979.25
World	344387400362.43	1159700686.82	318668.59	302863825587.26	15669426109.34	14261129212.42
Total: 344844004443.14	Sum of Sum of Amount by SC_GroupCommod_Desc	11596342514.54	945795.72	303323839965.77	15661004121.06	1426182986.05

Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10	k11	k12	k13	k14	k15	k16	k17	k18	k19	k20	k21	k22	k23	k24	k25	Practition
1997	1	1.00006	1.00011	1.00023	1	1	1.00006	0.9985	0.9899	1	1.00005	1	1	1.00004	1.00009	1.00005	1	1.00002	1.00002	1	1	0.97622	1	1	0.11853	
1998	1	1.00004	1	1.00170	0.9998	1.00125	1.00040	0.99849	1	1.00004	1	0.99992	0.99996	1.00007	1.00004	0.99842	1.00001	1.00001	1	1	0.98256	1	1	0.08806		
1999	1	0.99973	1	1.00125	1	1	1	1	1	0.9999	0.99806	1	1	1.00421	1	1	1	1	1	1	1.00002	1	1	0.04247		
2000	1	0.99967	1	1.00125	1	1	1	1	1	0.99990	0.99813	1	1	1.00057	1	1	1	1	1	1	1.00002	1	1	0.04431		
2001	1	1.00006	0.99974	1.00023	1	1.00125	1.00006	0.9985	1	1.00005	1	0.99990	0.99817	1.00009	1.00005	1.0057	1.00002	1.00002	1	1	0.97624	1	1	0.11858		
2002	0	0.99998	0.99973	0.99991	1	1.00125	0.99998	0.99999	0.98992	0.99998	1	1	0.99990	0.99996	0.99998	1.0057	0.99990	0.99998	1	1	1.00919	1	1	0.04874		
2003	1	1.00010	0.99973	1.00023	1	1.00125	1.00011	1	1.00021	1.00011	1	0.99990	0.99874	1.00011	1.00011	1	1	1	1	1	0.96689	1	1	0.01611		
2004	0	0.99990	0.99973	0.99994	1	1.00125	0.99990	0.99999	0.98992	0.99999	1	1	0.99990	0.99998	0.99999	0.99842	0.99998	1	1	1	1.00006	1	1	0.03207		
2005	0	0.99996	1	0.99831	1	1.00125	0.99990	0.99997	1.01024	0.99998	1	1	0.99997	0.99990	0.99998	0.99842	0.99999	0.99998	1	1	1.01758	1	1	0.09479		
2006	0	0.99996	1	0.99831	1	1.00125	0.99990	0.99997	1.01026	0.99996	1	1	0.99992	0.99997	0.99990	0.99996	1	0.99990	0.99999	1	1.01758	1	1	0.09487		
2007	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.01026	0.99996	1	1	0.99990	0.99990	0.99998	1.0057	0.99990	0.99998	1	1	1.0207	1	1	0.11210		
2008	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.01026	0.99996	1	1	0.99990	0.99992	0.99995	1.0057	0.99990	0.99998	1	1	1.0207	1	1	0.11219		
2009	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.01026	0.99996	1	1	0.99990	0.99992	0.99995	1.0057	0.99990	0.99998	1	1	1.0207	1	1	0.11218		
2010	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.01026	0.99996	1	1	0.99990	0.99992	0.99995	1.0057	0.99990	0.99998	1	1	1.0207	1	1	0.11210		
2011	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.01024	0.99996	1	1	0.99990	0.99992	0.99995	1.0057	0.99990	0.99998	1	1	1.0207	1	1	0.11210		
2012	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.01024	0.99996	1	1	0.99990	0.99992	0.99995	1.0057	0.99990	0.99998	1	1	1.0207	1	1	0.11210		
2013	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.01026	0.99996	1	1	0.99990	0.99992	0.99995	1.00432	0.99990	0.99998	1	1	1.0207	1	1	0.11219		
2014	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.01026	0.99996	1	1	0.99990	0.99990	0.99995	1.00412	0.99990	0.99998	1	1	1.02062	1	1	0.11177		
2015	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.01026	0.99996	1	1	0.99990	0.99992	0.99995	1.00412	0.99990	0.99998	1	1	1.0207	1	1	0.11219		
2016	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.01024	0.99996	1	1	0.99990	0.99992	0.99995	1.00412	0.99990	0.99998	1	1	1.0207	1	1	0.11219		
2017	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.00017	0.99996	1	1	0.99990	0.99992	0.99995	1.0057	0.99990	0.99998	1	1	1.0207	1	1	0.11221		
2018	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.01026	0.99996	1	1	0.99990	0.99990	0.99995	1.0057	0.99990	0.99998	1	1	1.02062	1	1	0.11171		
2019	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.01026	0.99996	1	1	0.99990	0.99990	0.99995	1.0057	0.99990	0.99998	1	1	1.02062	1	1	0.11171		
2020	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.00017	0.99996	1	1	0.99990	0.99990	0.99995	1.0057	0.99990	0.99998	1	1	1.02062	1	1	0.11173		
2021	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.00017	0.99996	1	1	0.99990	0.99990	0.99995	1.0057	0.99990	0.99998	1	1	1.0207	1	1	0.11221		
2022	0	0.99990	0.99990	0.9998	1	1.00125	0.99990	0.99997	1.00016	0.99996	1	1	0.99990	0.99990	0.99995	1.00412	0.99990	0.99998	1	1	1.02073	1	1	0.11231		



3a Scenario samples:

Report: Sample Sales Records by year in our Analytics from <http://OUReports.com>
Data:

Interactive Reporting | oureports.net/OUReports/ShowReport.aspx?rid=0

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Data for report: Sample Sales Records by year

Records returned: 100

OrderYear	Region	Country	Item Type	Sales Channel	Order Priority	Name	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	Index
2010	Australia and Oceania	Tuvalu	Baby Food	Offline	H		5/28/2010	669166000	6/27/2010	9525	255.28	159.42	2533650	1582240	951410	1
2012	Central America and the Caribbean	Grenada	Cereal	Offline	C		6/22/2012	963881000	9/15/2012	2804	206.7	117.11	576783	328376	248406	2
2014	Europe	Russia	Office Supplies	Offline	L		5/2/2014	341417000	5/3/2014	11719	691.21	524.96	1158600	933904	224699	3
2014	Sub-Saharan Africa	Sao Tome and Principe	Fruits	Online	C		6/20/2014	514322000	7/5/2014	8102	9.33	6.92	76591.7	56065.8	19525.8	4
2013	Sub-Saharan Africa	Rwanda	Office Supplies	Offline	L		2/13/2013	115457000	2/6/2013	5062	651.21	524.96	3296420	2657360	639078	5
2015	Australia and Oceania	Solomon Islands	Baby Food	Online	C		2/4/2015	547996000	2/21/2015	2974	255.28	159.42	759203	474115	285088	6
2011	Sub-Saharan Africa	Angola	Household	Offline	M		4/23/2011	135435000	4/27/2011	4187	668.27	502.54	2786050	2104140	693912	7
2012	Sub-Saharan Africa	Burkina Faso	Vegetables	Online	H		7/17/2012	871544000	7/27/2012	8082	154.06	90.93	1245110	73496	510217	8
2015	Sub-Saharan Africa	Republic of the Congo	Personal Care	Offline	M		7/14/2015	970463000	8/25/2015	6070	81.73	56.67	496101	343807	152114	9
2014	Sub-Saharan Africa	Senegal	Cereal	Online	H		4/18/2014	616697000	5/30/2014	6593	205.7	117.11	1356100	772106	584074	10
2011	Asia	Kyrgyzstan	Vegetables	Online	H		6/24/2011	814712000	7/12/2011	1124	154.06	90.93	19103.4	11273.3	7826.12	11
2014	Sub-Saharan Africa	Cape Verde	Clothes	Offline	H		8/2/2014	939826000	8/19/2014	4168	109.28	35.84	454479	149381	306098	12
2017	Central America and the Caribbean	Honduras	Household	Offline	H		2/8/2017	622840000	2/13/2017	8974	668.27	502.54	5997060	4609790	1487260	14
2014	Asia	Mongolia	Personal Care	Offline	C		2/19/2014	832401000	2/23/2014	4901	81.73	56.67	406559	277740	122819	15
2012	Europe	Bulgaria	Clothes	Online	M		4/23/2012	972292000	6/3/2012	1673	109.28	35.84	182825	59960.3	122865	16
2016	Asia	Sri Lanka	Cosmetics	Offline	M		11/19/2016	419124000	12/10/2016	6992	437.2	263.33	3039410	1836760	1202740	17
2015	Sub-Saharan Africa	Cameroon	Beverages	Offline	C		4/1/2015	81981000	4/18/2015	5430	47.46	31.79	257654	172620	85033.8	18
2010	Asia	Turkmenistan	Household	Offline	L		12/30/2010	441619000	1/20/2011	3830	668.27	502.54	2559470	1924730	634746	19
2012	Australia and Oceania	East Timor	Meat	Online	L		7/31/2012	322068000	9/11/2012	5908	421.89	364.69	2492530	2154590	337939	20
2014	Europe	Norway	Baby Food	Online	L		5/14/2014	819020000	6/28/2014	7450	255.28	159.42	1901840	1187600	714157	21
2015	Europe	Portugal	Baby Food	Online	H		7/31/2015	860674000	9/3/2015	1273	255.28	159.42	324971	202942	122030	22
2016	Central America and the Caribbean	Honduras	Snacks	Online	L		6/30/2016	795491000	7/26/2016	2225	152.58	97.44	339490	216804	122666	23
2014	Australia and Oceania	New Zealand	Fruits	Online	H		9/8/2014	142278000	10/4/2014	2187	9.33	6.92	20404.7	15134	5270.67	24
2016	Europe	Moldova	Personal Care	Offline	L		5/7/2016	748140000	5/10/2016	5070	81.73	56.67	414371	287317	127054	25
2017	Europe	France	Cosmetics	Online	H		5/22/2017	89853000	6/5/2017	1815	437.2	263.33	793518	477944	315574	26
2014	Australia and Oceania	Kiribati	Fruits	Online	M		10/13/2014	347140000	11/10/2014	5398	9.33	6.92	50363.3	37364.2	13009.2	27
2010	Sub-Saharan Africa	Mali	Fruits	Online	L		5/7/2010	686040000	5/10/2010	8822	9.33	6.92	84319.3	40288.2	14031	28
2014	Europe	Norway	Beverages	Offline	C		7/16/2014	435659000	7/30/2014	5124	47.46	31.79	243134	162992	80241.8	29
2012	Sub-Saharan Africa	The Gambia	Household	Offline	L		5/26/2012	886450000	6/9/2012	2370	668.27	502.54	1583800	1191020	392780	30

Last imported from the file SampleSalesRecordsYear.csv on 7/18/2022 11:08:40 AM

Parameters, Starting Matrix and Balancing Coefficients:

Advanced Analytics | oureports.net/OUReports/AdvancedAnalytics.aspx

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Sample Sales Records by year - Advanced Analytics - Matrix Balancing

Select Scenario: 3a Balancing coefficients for matrix of aggregated field1 values and for iterations of multiple selected aggregated fields

Steps: 1000 | Precision: 1 | Partial rows/columns: 0.0 | adjust by start matrix

3a: Get balancing coefficients for Starting Matrix of aggregated values of field1 and multiple Target Matrix of aggregated selected fields

Enter:

Matrix rows by: ItemType | columns by: Region

Matrix items by field1: OrderID | aggregation function: Count

Multiple fields: select all fields | unselect all fields | aggregation function: Sum

TotalRevenue, TotalCost, TotalProfit

(3a) Balancing coefficients for matrix of aggregated field1 values and for multiple selected aggregated fields

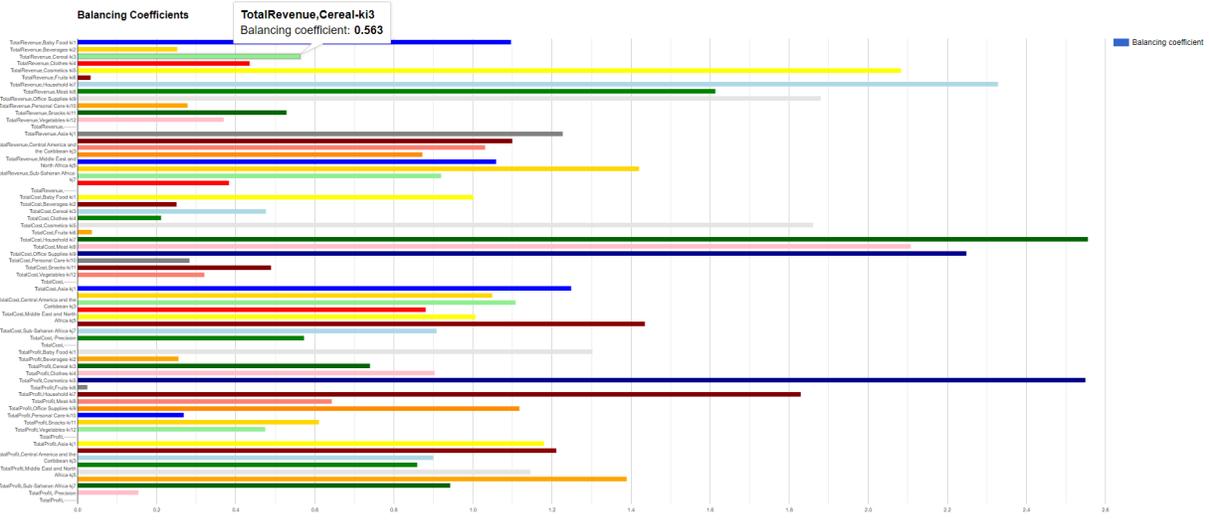
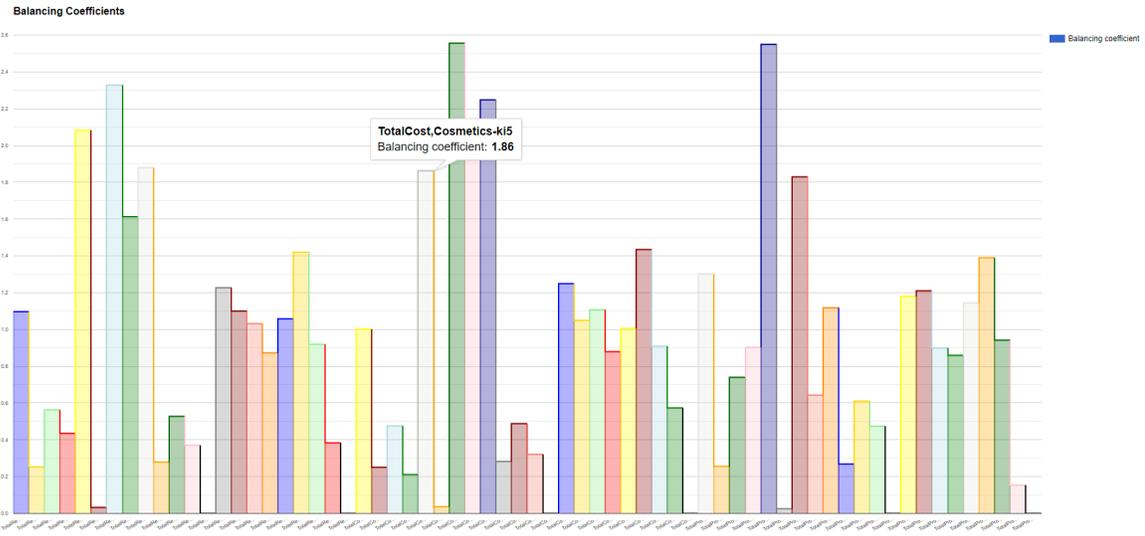
Done!

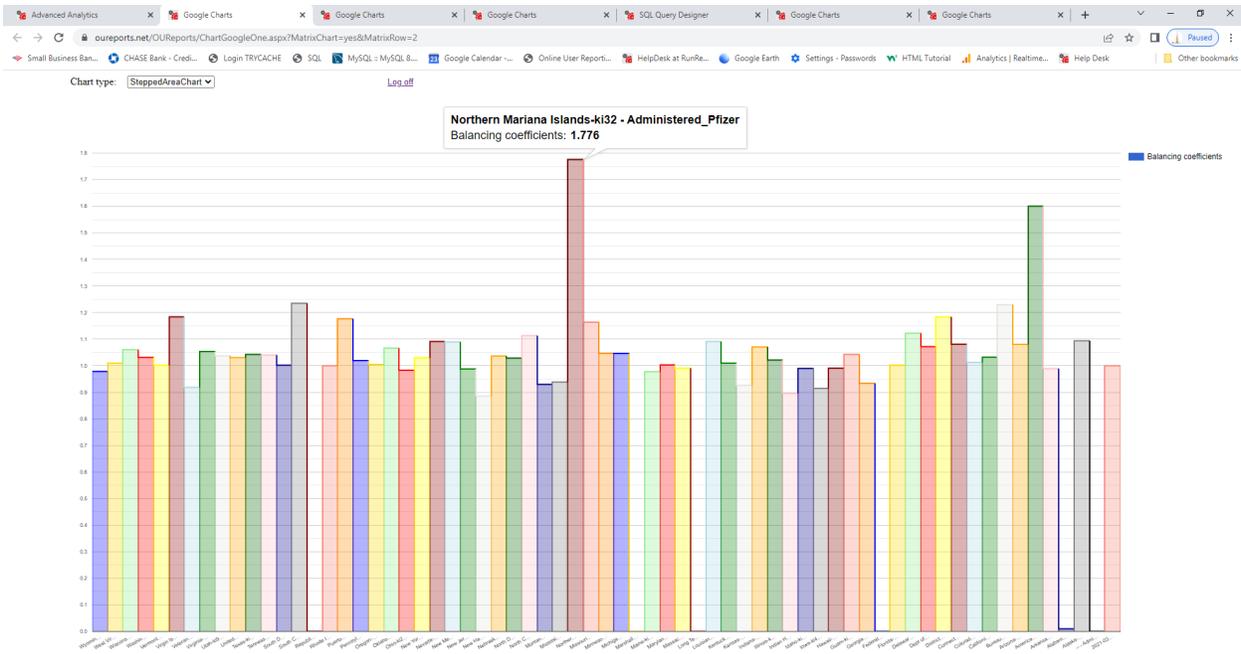
Starting Matrix of Count of OrderID | Export to Excel

Item Type	Sum of Count of OrderID by Item Type	Asia	Australia and Oceania	Central America and the Caribbean	Europe	Middle East and North Africa	North America	Sub-Saharan Africa
Baby Food	7	2	0	0	4	0	1	
Beverages	8	0	2	1	2	0	3	
Cereal	7	2	1	1	0	1	2	
Clothes	13	2	1	1	3	2	4	
Cosmetics	13	1	1	1	5	3	2	
Fruits	10	1	2	0	2	0	4	
Household	9	2	0	1	2	0	3	
Meat	2	0	1	0	0	0	1	
Office Supplies	12	2	1	0	3	1	5	
Personal Care	10	1	0	1	2	0	6	
Snacks	3	0	0	1	0	0	2	
Vegetables	6	2	0	0	1	0	3	
Total: 100	Sum of Count of OrderID by Region:	13	9	7	22	10	3	36

Balancing coefficients | Chart | Export to Excel

Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10	k11	k12	k13	k14	k15	k16	k17	Precision		
TotalRevenue	1.05667	0.25258	0.56291	0.43522	0.82510	0.32882	3.285	1.61326	1.87973	0.27842	0.52804	0.37008	1.2273	1.10003	1.03144	0.8728	1.05653	1.4197	0.91926	0.38355
TotalCost	1.00174	0.25028	0.47619	0.21113	1.06000	0.36762	5.5592	2.10675	2.24819	0.28274	0.48856	0.3212	1.24872	1.04947	1.0695	0.8797	1.00612	1.43491	0.90893	0.57332
TotalProfit	1.30165	0.25582	0.73985	0.90364	2.54963	0.025291	8.29520	6.43321	1.18331	0.26847	0.61081	0.47376	1.18032	1.21014	0.90007	0.85922	1.14485	1.38984	0.94195	0.1538





Report: Art Comp. in our Analytics from <http://OUReports.com>

Field GeoName has State info, field Description has info about specific types of compensations, multiple columns have year's compensation in thousands of dollars.

Data:

Interactive Reporting

Advanced Analytics

oureports.net/OUReports/ShowReport.aspx?rld=0

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Data for report: Arts Comp Search:

Records returned: 1989

GeoFIP	GeoName	Region	Table Name	LineCode	IndustryClassification	Description	Unit	col2001	col2002	col2003	col2004	col2005	col2006	col2007	col2008	col2009	col2010	col2011	col2012	col2013	col2014	col2015	col2016	col2017	col2018	col2019	Indx	
01000	Alabama	5	SAACArtsComp	1	...	Total compensation	Thousands of dollars	12064300	74181800	77192000	81625100	86396900	91146700	95286200	97638900	95339000	96826700	98908700	100369000	102166000	106913000	109997000	112810000	116556000	121478000	126847000	1	
01000	Alabama	5	SAACArtsComp	10	...	Total ACP/SA compensation	Thousands of dollars	2350680	2495680	2424940	2452210	2466920	2412150	2383510	2400720	2321610	2334420	2361960	2316500	2334680	2360770	2412350	2478570	2586030	2610580	2631230	2	
01000	Alabama	5	SAACArtsComp	100	...	Core arts and cultural production	Thousands of dollars	241165	252670	259548	264496	278895	296302	309949	329961	321495	299217	288306	306156	301959	322038	325388	337840	363636	394537	402926	3	
01000	Alabama	5	SAACArtsComp	111	...	Performing arts of companies	Thousands of dollars	22663	19591	19305	20302	19980	19148	18476	19040	20738	20596	21283	19770	18744	20004	19169	20043	0	0	20691	4	
01000	Alabama	5	SAACArtsComp	112	...	Promoters of performing arts and similar events	Thousands of dollars	6434	10248	10332	7947	8069	8972	9224	10448	13899	14466	16096	19645	21085	21989	21204	24084	16933	17545	16785	5	
01000	Alabama	5	SAACArtsComp	113	...	Agents/managers for artists	Thousands of dollars	714	515	607	642	576	616	807	767	1019	1211	787	768	1079	1075	1004	1060	1019	1116	1399	6	
01000	Alabama	5	SAACArtsComp	114	...	Independent artists, writers and performers	Thousands of dollars	2707	5778	8274	7679	10599	10679	8085	9521	9002	8054	7747	7189	9964	7671	8685	10361	11660	13303	12724	7	
01000	Alabama	5	SAACArtsComp	120	...	Museums	Thousands of dollars	2378	15080	0	0	18118	0	0	0	0	20448	0	24984	25117	0	0	26605	29206	29281	33294	8	
01000	Alabama	5	SAACArtsComp	131	...	Advertising	Thousands of dollars	38911	37287	38565	43590	46500	49531	50895	54541	47278	47936	46162	46525	0	48445	48984	0	53801	57904	56983	9	
01000	Alabama	5	SAACArtsComp	132	...	Architectural services	Thousands of dollars	65823	64200	70661	73016	80902	91094	102254	106287	98202	78814	75187	76164	77907	76784	82228	83471	99050	109369	109726	10	
01000	Alabama	5	SAACArtsComp	133	...	Landscape architectural services	Thousands of dollars	2920	5603	6094	4046	3685	4756	4890	5074	5072	6660	6034	6201	6472	8274	7471	7874	8121	8307	8298	11	
01000	Alabama	5	SAACArtsComp	134	...	Interior design services	Thousands of dollars	2482	5025	5063	5232	5149	5964	7266	5984	4721	4944	4295	5866	4329	6340	7107	8661	9711	11199	14121	12	
01000	Alabama	5	SAACArtsComp	135	...	Industrial design services	Thousands of dollars	220	570	705	475	536	896	835	3700	3750	3748	3507	3681	1584	2204	2126	2332	2970	2292	2040	13	
01000	Alabama	5	SAACArtsComp	136	...	Graphic design services	Thousands of dollars	6902	6734	7283	8309	8670	9158	9342	10654	9923	9976	8513	11077	9464	14687	16431	17329	22293	24754	26057	14	
01000	Alabama	5	SAACArtsComp	137	...	Computer systems design	Thousands of dollars	2219	9689	10820	10978	11098	11535	13283	16388	16933	17637	18233	20226	18847	20037	20720	20307	20914	21983	21185	15	
01000	Alabama	5	SAACArtsComp	138	...	Photography and photo/finishing services	Thousands of dollars	22425	44997	40849	37160	34543	31112	30388	30971	31461	28660	0	0	0	0	0	0	0	0	0	28461	16
01000	Alabama	5	SAACArtsComp	139	...	All other design services	Thousands of dollars	164	876	716	923	899	941	1071	1212	1108	901	971	1284	1114	1522	1246	945	1457	1573	1587	17	
01000	Alabama	5	SAACArtsComp	140	...	Fine arts education	Thousands of dollars	7444	6597	0	0	12767	0	0	0	0	13258	12789	0	12435	12756	13158	14142	16576	17787	18		
01000	Alabama	5	SAACArtsComp	150	...	Education services	Thousands of dollars	15653	19880	19065	19605	20812	21014	20277	20771	22378	21909	22488	23873	24913	26254	27763	27526	27619	30499	31788	19	
01000	Alabama	5	SAACArtsComp	200	...	Supporting arts and cultural	Thousands of dollars	1994800	2124160	2047520	2066360	2068040	1984950	1937330	1935570	1870810	1915800	1955100	1886630	1922740	1926720	1968100	2017860	2099380	2091900	2100660	20	

Parameters and starting matrix:

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038			
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038			
1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

Color coded green if increased and grey if decreased with links to detail charts.

Report: Gross Domestic Product GDP by Area in our Analytics from <http://OUReports.com>
Data:

GeoID	GeoName	LineCode	Description	col2010Q1	col2010Q2	col2010Q3	col2010Q4	col2011Q1	col2011Q2	col2011Q3	col2011Q4	col2012Q1	col2012Q2	col2012Q3	col2012Q4	col2013Q1	col2013Q2	col2013Q3	col2013Q4	col2014Q1	col2014Q2	col2014Q3	col2014Q4	col2015Q1
91000	New England	3	Agriculture, forestry, fishing and hunting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91000	New England	6	Mining, quarrying, and oil and gas extraction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91000	New England	10	Utilities	13726.9	14476.1	14137	13778.6	12923.4	14077.3	13805.9	13935.5	14012.8	13973.2	13521.8	13669.5	14661.5	14339.2	14658.6	14484.1	14584	14583.1	15408.2	16377.6	14923.5
91000	New England	11	Construction	25456.4	25936	25795	25424.7	24915.4	25752.5	25942.1	27015.7	27410.2	27343.8	27385.8	27567.7	27793.9	28116.2	28524.3	28547.8	28457.7	29120.4	29887	30358.3	30415.3
91000	New England	12	Manufacturing	91090.6	93490.1	96404.9	94579.7	91836.7	95324.2	91600.9	95373.2	93804.4	96243.1	96057.8	96220.2	96189.9	96365.3	97529.3	98746.6	94033.6	96168.3	99328.2	102621	102288
91000	New England	34	Wholesale trade	45803.7	46872.7	48120.3	47623	47397.3	48419.9	44053.5	49779.4	49826.6	50927.9	50844.2	50723.9	51990.1	51441.2	52071	52875.4	51194.8	52680.1	53872.5	54366.6	54689.9
91000	New England	35	Retail trade	43570.8	44053.5	43877.8	44144.1	43747.2	43825.8	44943.3	44942.5	44836.6	44931	45197.9	45462.2	46164.3	45956.1	46242.7	46460.9	45595.9	46344.5	46872.5	47308.1	47104
91000	New England	36	Transportation and warehousing	13022.4	13437.2	13674.3	13818.1	13849.5	14236.1	14209.1	14354.9	14317.2	14352.9	14419.6	14531	14481.1	14506.5	14914.4	15213.5	15364.2	15723.2	16127.8	16124.7	17645.3
91000	New England	45	Information	39913.4	42125.6	42537.8	42415.5	41382.4	42500.7	41265.9	41559.1	39959.3	40621.5	40887.3	40932.4	43005.5	44043.2	44440.9	43276.4	43763.8	44378.6	44380.3	44106	47052.7
91000	New England	51	Finance and insurance	83245.4	80103.6	76347	77046.9	72682.8	76040	79762.6	80824.8	84089.3	88601.6	90377.8	90265	82130.8	82279.9	82976.8	85520.3	84630.6	88264.2	89788.9	95812	100048
91000	New England	56	Real estate and rental and leasing	122224	124048	125018	126763	126362	129231	130964	132881	130830	131408	132101	130360	131535	130526	133231	132928	133680	133361	135832	133312	136336
91000	New England	60	Professional, scientific, and technical services	70412.1	72083.8	74210.3	75061.6	74096.4	75658.6	76135.9	76666.2	76812.6	80871	81049.1	79188.1	80221.4	80450.9	81092.6	82392.7	81860	83211.6	86975.6	88209.3	88158.5
91000	New England	64	Management of companies and enterprises	16162.2	16510.7	17474.2	17775.7	17193.9	21360.5	17679.9	18187.6	19441.1	19150.4	20148	22237.2	21377.2	20375.7	20749.3	21176.8	22434.8	21659.7	21640.1	22407.6	24236.9
91000	New England	65	Administrative and support and waste management and remediation services	21163	21726.2	22076.7	22250.8	22281	22364.8	22564.3	22729.7	23675.9	23546.6	23616.2	23610.6	23916.4	24117.9	24552	24695	24861	25499.2	25851.7	26249	26418.5
91000	New England	69	Educational services	22268	22829.6	23110.4	23193	23326.6	23545.5	23751	23922.2	24092.3	24514.5	24470.4	24536.9	24645.6	24926.4	25047.5	25328.1	25145.7	25690.1	25971.4	26403.9	26339.4
91000	New England	70	Health care and social assistance	75289	76828.6	79031.2	77461.8	78914.3	78959.7	78847.9	80382.9	82259.9	82500.5	82672.6	83409.5	84749.8	84455.4	84704.3	85181.2	84835.3	86515.1	87552.9	89599.9	88149.1
91000	New England	72	Arts, entertainment, and recreation	7604.3	7906.3	8137.7	8177.4	8011.6	8148.0	8154.6	8113.6	8014.7	8011.6	8008.8	8111.6	8146.8	8146.8	8146.8	8146.8	8146.8	8146.8	8146.8	8146.8	8146.8

Parameters:

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Gross Domestic Product GDP byArea - Advanced Analytics - Matrix Balancing

Select Scenario: **Ba** Balancing coefficients for matrix of aggregated field1 values and for iterations of multiple selected aggregated fields | Steps: 100 | Precision: 1 | Partial rows/columns: 0.0 | adjust by start matrix.

Get Balancing coefficients for Starting Matrix of aggregated values of field1 and multiple Target Matrix of aggregated selected fields

Enter: Matrix rows by field: **GeoName** | columns by: **Description**

Matrix items by field: **col2010Q1** | aggregation function: **Sum**

Multiple fields: select all fields | unselect all fields | aggregation function: **Sum**

(3a) Balancing coefficients for matrix of aggregated field1 values and for multiple selected aggregated fields

Done!

Starting Matrix of Sum of col2010Q1

GeoName	Sum of Sum of col2010Q1 by GeoName	Real estate and rental and leasing	Manufacturing	Finance and insurance	Information and technical services	Professional, scientific, and technical services	Health care and social assistance	Retail trade	Wholesale trade	Construction and management and remediation services	Administrative and support and waste and recycling services	Transportation and warehousing	Mining, quarrying, and oil and gas extraction	Accommodation and food services	Other services (except government and government enterprises)	Management of companies and government enterprises	Utilities	Educational services	Agriculture, forestry, fishing and hunting	Arts, entertainment, and recreation
Far West	244487.8	42453	202550	127233	187310	208550	174520	157248	140862	92271.7	77880.4	71990.5	35565.6	0	586.89	0	20731.4	37148.3	35565.7	
Southeast	2696791.1	59323	46104	155646	133426	208159	245554	202015	151066	122508	101336	9540.7	4681	86639.5	75241.4	51847.3	86809.7	34501.4	2350	
Midwest	2363171.4	383197	213078	307950	178960	235759	213203	134756	148490	85028.1	73365.1	63340.1	0	62126.1	60764	61847.4	51879.3	4309.7	0	
Great Lakes	1783366.2	242630	345152	146002	67527.8	124205	168506	117722	132034	65211.2	60167.1	62400.6	8714.6	48265.6	46921.2	44202.5	40387.3	29972.7	1732.7	
Southwest	164419.4	168550	207460	40497.5	62139.6	105679	112493	98139	114014	73336.3	54617.1	54939.6	162122	46937.7	34615	15507.7	36151.1	13787.4	9780.5	
Plains	823195.2	103861	128137	77724.7	39056.6	47887	77305.9	56704.1	64484.6	34363.7	23142.8	33460.6	7976.8	21784.2	21847.5	23778.8	18542.6	10531	26525.9	
New England	728182.8	122224	91090.6	83245.4	39913.4	70412.1	75289	43570.8	45803.7	25456.4	21163	13022.4	0	20791.6	16149.1	16162.2	13276.9	22768	0	
Rocky Mountain	427217.6	64313.6	46812.6	26440.2	25907.7	35340.3	31564.3	30275.4	25776.6	21225.3	13486.7	15934	32466.4	13781.3	11400.2	7464	8775.1	4803	6631	
Total: 12530331.9	1908211.6	1754075.2	1015194.8	734241.1	1035285.4	1091469.2	838375.3	862539.1	519400.7	425658.2	414488.7	297077.2	310326	322777.3	257676.5	275006.2	194853.1	125368.6	148177.1	

Balancing coefficients Chart

Steps	k11	k12	k13	k14	k15	k16	k17	k18	k19	k21	k22	k23	k24	k25	k26	k27	k28	k29	k31	k32	k33	k34	k35	k36	k37	k38	k39
col2010Q2	0.99531	0.00022	0.00241	0.06330	0.97621	0.01941	0.01480	0.99225	0.00018	0.00203	0.82625	0.99969	0.01085	0.99921	0.00481	0.00768	0.02024	0.00704	0.02080	0.95163	0.05446	0.98393	0.00340	0.9836	0.01110	0.03343	0.00734
col2010Q3	0.99219	0.00070	0.00278	0.04	0.00221	0.044	0.00377	0.99548	0.99277	0.00666	0.9455	0.101979	0.01367	0.00190	0.99253	0.02303	0.99006	0.01190	0.03826	0.9484	0.00511	0.98664	0.00876	0.98618	0.00251	0.80616	0.00762
col2010Q4	0.00370	0.99961	0.88221	0.0291	0.00816	0.0096	0.99214	0.0477	0.99551	0.00644	0.95318	0.00884	0.01757	0.99601	0.85091	0.01053	0.97426	0.01297	0.03801	0.94343	0.00296	0.9893	0.03051	0.99521	0.00001	1.26071	0.01678
col2011Q1	0.00265	0.99201	0.89871	0.13821	0.11767	0.078	0.97681	0.9966	0.98911	0.00382	0.96127	0.95319	0.02311	0.98165	0.90727	0.01465	0.94447	0.01177	0.02911	0.0248	0.0457	0.91671	0.0395	0.96243	0.00271	1.19221	0.00527
col2011Q2	0.99940	0.99130	0.88221	0.1236	0.0241	0.01537	0.921	0.99752	0.99803	0.00396	0.93748	0.98895	0.02780	0.99320	0.97761	0.02210	0.95506	0.00583	0.02813	0.09367	0.00726	0.97382	0.02451	0.99413	0.00011	1.28123	0.11233

Result - Balancing coefficients by quarters for Areas and Industries:

Balancing coefficients Chart

Steps	k11	k12	k13	k14	k15	k16	k17	k18	k19	k21	k22	k23	k24	k25	k26	k27	k28	k29	k31	k32	k33	k34	k35	k36	k37	k38	k39
col2010Q2	0.99531	0.00022	0.00241	0.06330	0.97621	0.01941	0.01480	0.99225	0.00018	0.00203	0.82625	0.99969	0.01085	0.99921	0.00481	0.00768	0.02024	0.00704	0.02080	0.95163	0.05446	0.98393	0.00340	0.9836	0.01110	0.03343	0.00734
col2010Q3	0.99219	0.00070	0.00278	0.04	0.00221	0.044	0.00377	0.99548	0.99277	0.00666	0.9455	0.101979	0.01367	0.00190	0.99253	0.02303	0.99006	0.01190	0.03826	0.9484	0.00511	0.98664	0.00876	0.98618	0.00251	0.80616	0.00762
col2010Q4	0.00370	0.99961	0.88221	0.0291	0.00816	0.0096	0.99214	0.0477	0.99551	0.00644	0.95318	0.00884	0.01757	0.99601	0.85091	0.01053	0.97426	0.01297	0.03801	0.94343	0.00296	0.9893	0.03051	0.99521	0.00001	1.26071	0.01678
col2011Q1	0.00265	0.99201	0.89871	0.13821	0.11767	0.078	0.97681	0.9966	0.98911	0.00382	0.96127	0.95319	0.02311	0.98165	0.90727	0.01465	0.94447	0.01177	0.02911	0.0248	0.0457	0.91671	0.0395	0.96243	0.00271	1.19221	0.00527
col2011Q2	0.99940	0.99130	0.88221	0.1236	0.0241	0.01537	0.921	0.99752	0.99803	0.00396	0.93748	0.98895	0.02780	0.99320	0.97761	0.02210	0.95506	0.00583	0.02813	0.09367	0.00726	0.97382	0.02451	0.99413	0.00011	1.28123	0.11233

Report: Macro Economics in our Analytics from <http://OUReports.com>

Data:

Online User Reporting

hide duplicate records Export delimiter: [Help for this page](#)

Data for report: Macro Economics Search:

Records returned: 16

Line	colName1	col1987	col1988	col1989	col1990	col1991	col1992	col1993	col1994	col1995	col1996	col1997	Indx
3	Agriculture, forestry, fishing, and hunting	79.3	78.7	91.7	96.1	88	98.6	90.5	105.3	90.7	113.6	108.6	1
6	Mining	73.1	74	78.6	88.3	79.4	73.5	74.4	76.1	76.5	90.1	95.1	2
10	Utilities	125.8	125.3	138.5	145.6	153.8	160.1	164.7	172.4	176	175	171.5	3
11	Construction	211	227.8	241	245.9	230	235	251.4	277.7	292.9	316.3	339.6	4
12	Manufacturing	878.8	960.4	1015.8	1035.4	1043	1085.5	1124.3	1193.4	1259.6	1301.5	1382.9	5
34	Wholesale trade	286.2	314.9	336.4	347.8	362.5	380.4	403.5	444.6	462.2	495.1	527.5	6
35	Retail trade	346.1	367.2	391.2	399.9	407.2	426.2	461.9	498.8	522.3	550.2	579.9	7
40	Transportation and warehousing	153.1	162.8	168.6	174.9	183.9	194.7	207.4	223.8	229.3	237.5	257.3	8
49	Information	222.5	233.1	254	269.3	281	299.3	321.4	340.9	356.3	386.8	394.1	9
54	Finance, insurance, real estate, rental, and leasing	842.1	907	972.8	1037.9	1097.3	1181.2	1248.5	1314.2	1406.5	1493.2	1612.4	10
65	Professional and business services	388.6	429.7	477	523.5	531.6	575.8	608	643.5	690	756.6	840.6	11
74	Educational services, health care, and social assistance	278.9	302.9	339.2	377.9	414.2	449.4	484.6	516	538.5	561.9	590.6	12
82	Arts, entertainment, recreation, accommodation, and food services	153.4	170	185.1	200.5	206.6	219.1	232.3	244.2	257.3	274.9	301.8	13
89	Other services, except government	121.3	133.3	145	154	155.8	166	179.4	193.3	204.8	216.4	230.3	14
92	Federal General government	261	278.5	292.8	306.7	323.5	329.6	331.5	332.6	333	331.8	333.5	15
96	State and local government	403.2	436.3	477.5	522.5	558.6	599.6	629.7	661.6	692.4	720.6	754.8	16

Last imported from the file IndustryShort.csv on 7/24/2021 9:12:45 AM Last imported from the file IndustryShort.csv on 7/24/2021 9:13:59 AM Last imported from the file IndustryShort.csv on 7/24/2021 10:49:26 AM

Parameters and starting matrix (note that row and column groups based on the same field for industry name):

Advanced Analytics - Advanced Analytics - Matrix Balancing

Select Scenario: Balancing coefficients for matrix of aggregated field1 values and for iterations of multiple selected aggregated fields matrix

Get balancing coefficients for Starting Matrix of aggregated values of field1 and multiple Target Matrix of aggregated selected fields

Enter:

Matrix rows by: colName1 columns by: colName1

Matrix items by field: col1987 aggregation function: Sum

Multiple fields: select all fields unselect all fields

col1988.col1989.col1990.col1991.col1992.col1993.col1994.col1995.col1996.col1997

(3a) Balancing coefficients for matrix of aggregated field1 values and for multiple selected aggregated fields

Done!

Starting Matrix of Sum of col1987 [Export to Excel](#)

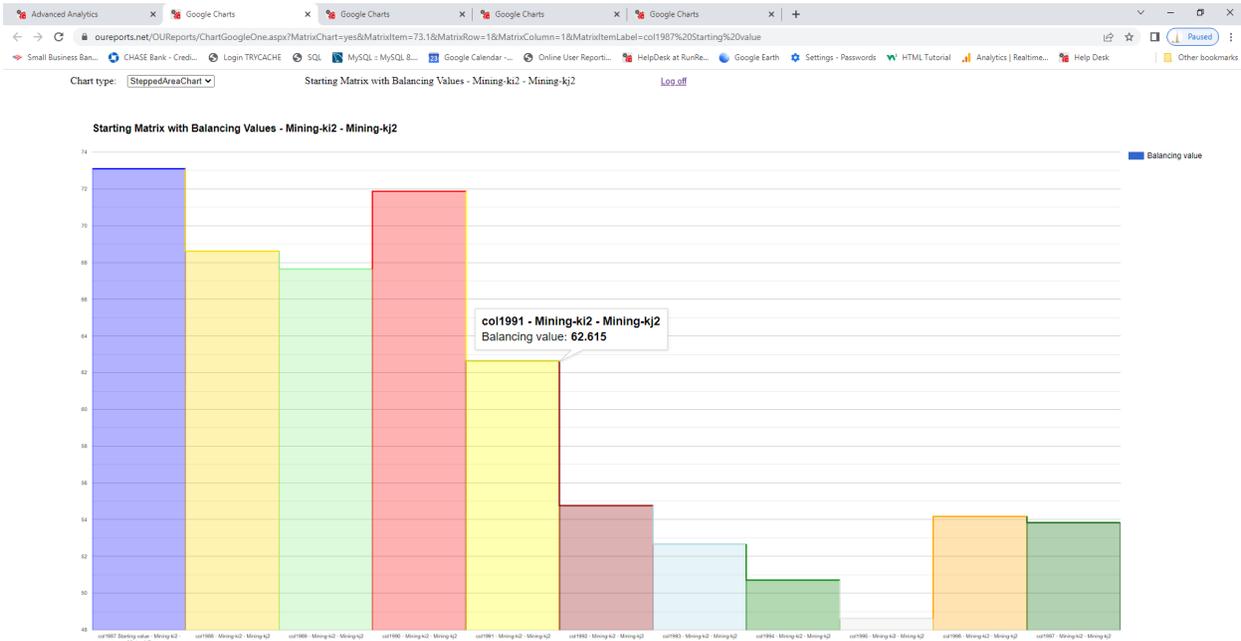
colName1	Sum of Sum of col1987 by colName1	Agriculture, forestry, fishing, and hunting	Mining	Utilities	Construction	Manufacturing	Wholesale trade	Retail trade	Transportation and warehousing	Information, real estate, rental, and leasing	Professional and business services	Educational services, health care, and social assistance	Arts, entertainment, recreation, accommodation, and food services	Other services, except government	Federal General government	State and local government
Agriculture, forestry, fishing, and hunting	79.3	79.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mining	73.1	0	73.1	0	0	0	0	0	0	0	0	0	0	0	0	0
Utilities	125.8	0	0	125.8	0	0	0	0	0	0	0	0	0	0	0	0
Construction	211	0	0	0	211	0	0	0	0	0	0	0	0	0	0	0
Manufacturing	878.8	0	0	0	0	878.8	0	0	0	0	0	0	0	0	0	0
Wholesale trade	286.2	0	0	0	0	0	286.2	0	0	0	0	0	0	0	0	0
Retail trade	346.1	0	0	0	0	0	0	346.1	0	0	0	0	0	0	0	0
Transportation and warehousing	153.1	0	0	0	0	0	0	0	153.1	0	0	0	0	0	0	0
Information	222.5	0	0	0	0	0	0	0	0	222.5	0	0	0	0	0	0
Finance, insurance, real estate, rental, and leasing	842.1	0	0	0	0	0	0	0	0	0	842.1	0	0	0	0	0
Professional and business services	388.6	0	0	0	0	0	0	0	0	0	388.6	0	0	0	0	0
Educational services, health care, and social assistance	278.9	0	0	0	0	0	0	0	0	0	0	278.9	0	0	0	0
Arts, entertainment, recreation, accommodation, and food services	153.4	0	0	0	0	0	0	0	0	0	0	0	153.4	0	0	0
Other services, except government	121.3	0	0	0	0	0	0	0	0	0	0	0	0	121.3	0	0
Federal General government	261	0	0	0	0	0	0	0	0	0	0	0	0	0	261	0
State and local government	403.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	403.2
Total:	4824.4	79.3	73.1	125.8	211	878.8	286.2	346.1	153.1	222.5	388.6	278.9	153.4	121.3	261	403.2

Balancing coefficients by years:

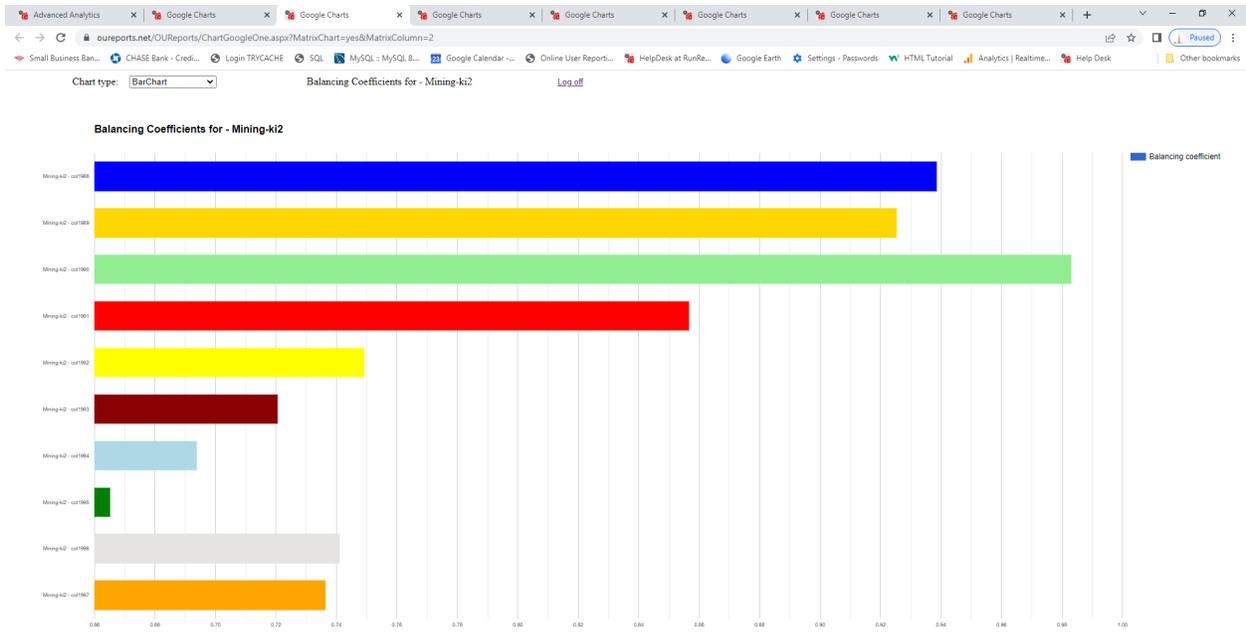
	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10	k11	k12	k13	k14	k15	k16	
Manufacturing	816.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wholesale trade	286.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Retail trade	346.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Transportation and warehousing	153.1	0	0	0	0	0	0	0	0	153.1	0	0	0	0	0	0	
Information	222.5	0	0	0	0	0	0	0	0	0	0	222.5	0	0	0	0	
Finance, insurance, real estate, rental, and leasing	842.1	0	0	0	0	0	0	0	0	0	0	0	842.1	0	0	0	
Professional and business services	388.6	0	0	0	0	0	0	0	0	0	0	0	0	388.6	0	0	
Educational services, health care, and social assistance	278.9	0	0	0	0	0	0	0	0	0	0	0	0	278.9	0	0	
Arts, entertainment, recreation, accommodation, and food services	153.4	0	0	0	0	0	0	0	0	0	0	0	0	0	153.4	0	
Other services, except government	121.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121.3	
Federal General government	261	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	261
State and local government	403.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	403.2
Total: 4824.4	Sum of col1987	79.3	73.1	125.8	211	878.8	286.2	346.1	153.1	222.5	842.1	388.6	278.9	153.4	121.3	261	403.2

Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10	k11	k12	k13	k14	k15	k16
col1988	0.00224	0.03859	0.02344	0.0112	1.01353	1.02200	0.98359	0.98599	0.97155	0.98891	0.92540	1.00710	0.27691	0.01905	0.88561	1.00353
col1989	0.9951	0.92527	0.94740	0.98301	0.99486	1.01162	0.97282	0.94775	0.98249	0.99427	1.05646	1.04673	1.03846	1.02874	0.96551	1.01927
col1990	0.88636	0.98316	0.9421	0.94866	0.95913	0.98925	0.94059	0.92991	0.98525	1.00335	1.06664	1.10299	1.06393	1.03341	0.96657	1.05491
col1991	0.87514	0.95857	0.96421	0.89973	0.93613	0.98999	0.92797	0.94735	0.99608	1.02778	1.07898	1.17135	1.06221	1.01298	0.97759	1.09273
col1992	0.92639	0.74912	0.94827	0.9299	0.92046	0.99942	0.91762	0.94759	1.00235	1.04526	1.10414	1.20099	1.06425	1.01669	0.94011	1.16914
col1993	0.80792	0.72051	0.9269	0.84359	0.90585	0.98220	0.94493	0.9591	1.02273	1.04976	1.10779	1.23023	1.07215	1.04700	0.89927	1.10578
col1994	0.84486	0.69371	0.91328	0.87713	0.90509	1.03533	0.96052	0.97419	1.0211	1.04014	1.10365	1.23304	1.06091	1.06199	0.84929	1.0936
col1995	0.92703	0.6652	0.88936	0.88248	0.91124	1.02680	0.9594	0.95211	1.01802	1.06186	1.2883	1.22748	1.06628	1.07328	0.8111	1.09174
col1996	0.86141	0.74115	0.93655	0.90152	0.88971	1.04037	0.96607	0.9329	1.04548	1.06643	1.17894	1.21564	1.07789	1.07293	0.76454	1.07484
col1997	0.77527	0.73647	0.77181	0.91124	0.89099	1.04354	0.94866	0.95148	1.00283	1.08413	1.22475	1.19895	1.11386	1.07488	0.72345	1.05992

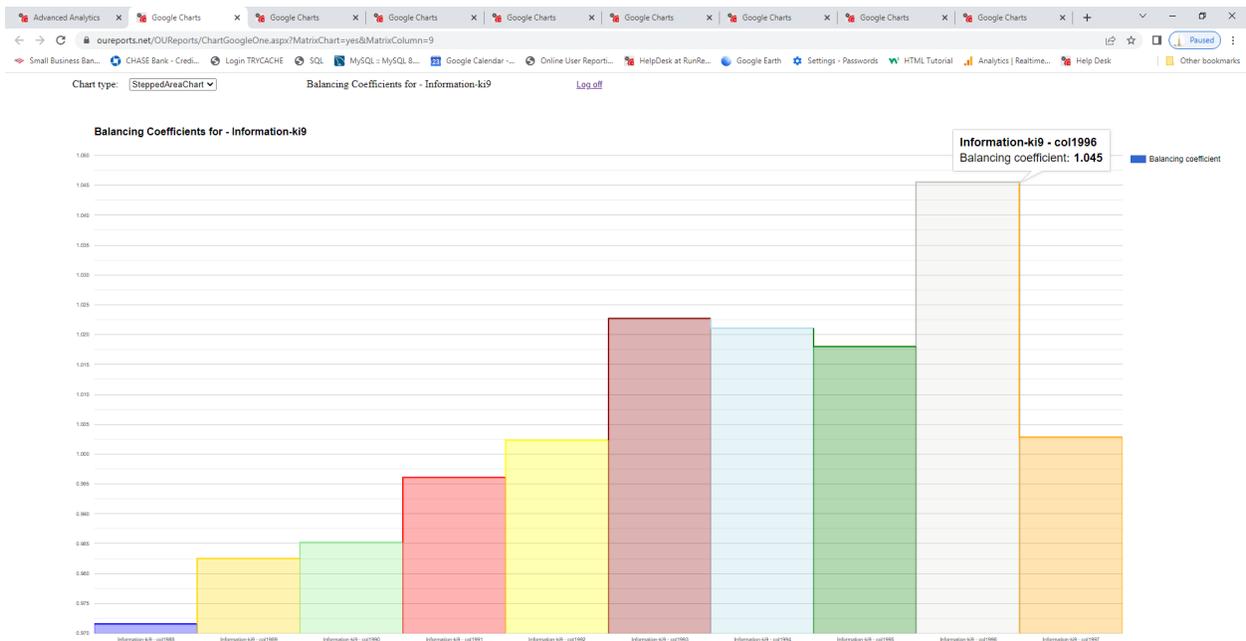
Clicking on the link for cell Mining from the starting matrix opens the chart:

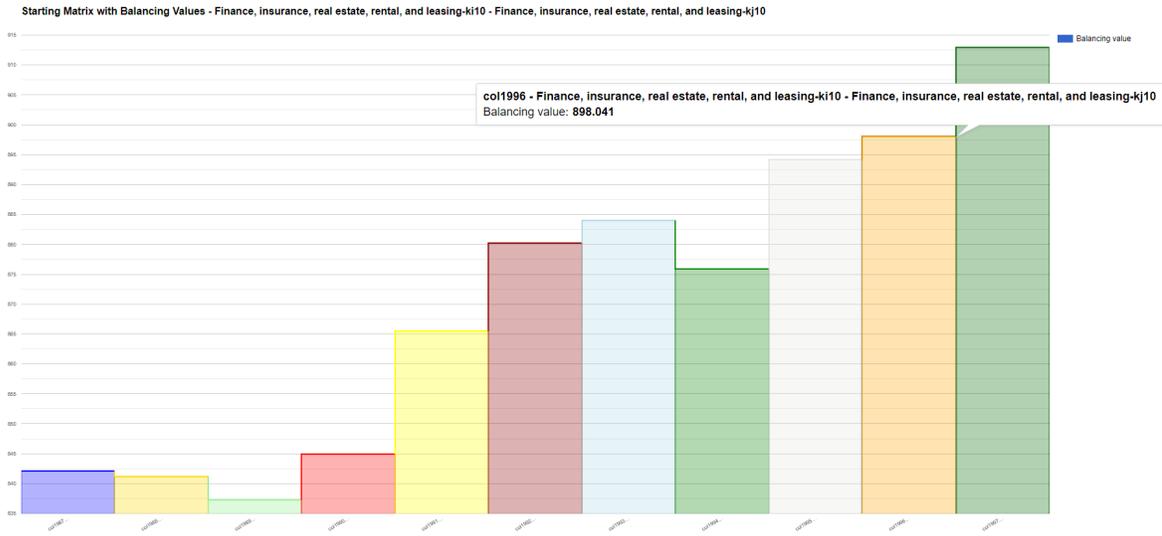


Clicking on the link ki2 in Balancing Coefficients column header opens the chart:



Clicking on other links gives detail information on industries weights:





Report: Crime 2018-2019 in our Analytics from <http://OUReports.com>
Data:

Online User Reporting

- Log Off
- List of Reports
- Report Definition
- Report Data Definition
- Report Format Definition
- Explore Report Data
- Export Data to Excel
- Export Data to CSV
- Export Data to Delimited File
- Export Data to XSL
- Show Report
- Show Report Graph
- Export Report to Excel
- Export Report to Word
- Export Report to PDF
- Show Analytics
- See Statistics
- Export Statistics to Excel
- See Field Combinations
- Matrix Balancing

hide duplicate records | Report delimiter: | Reset | Help for this page

Data for report: Crime 2018-2019 | Search: | Search

Records returned: 101

Year	States	Total Murders	Total Firearms	Handguns	Rifles	Shotguns	Firearm type unknown	Knives/cutting instruments	Other Weapons	Hand/fists/feet	Index
2018	Alabama	2	2	2	0	0	0	0	0	0	11
2018	Alaska	47	31	77	3	0	21	8	3	5	2
2018	Arizona	339	203	139	12	6	46	45	87	4	3
2018	Arkansas	218	156	66	6	5	79	17	38	7	4
2018	California	11739	1177	934	24	27	292	262	223	87	5
2018	Colorado	207	147	99	2	8	38	27	13	20	6
2018	Connecticut	83	54	10	2	0	42	18	9	2	7
2018	Delaware	48	40	14	1	2	23	4	3	1	8
2018	District of Columbia	151	120	120	0	0	0	20	7	4	9
2018	Georgia	568	460	410	11	10	29	44	62	2	10
2018	Hawaii	33	11	6	1	0	4	10	6	6	11
2018	Idaho	32	19	14	2	2	1	4	8	1	12
2018	Illinois	864	706	592	14	4	98	77	53	26	13
2018	Indiana	371	294	136	10	7	141	33	29	15	14
2018	Iowa	43	20	6	2	2	10	8	9	6	15
2018	Kansas	110	78	47	0	2	29	7	19	6	16
2018	Kentucky	237	179	112	12	6	48	17	32	6	17
2018	Louisiana	521	436	233	12	5	186	30	44	11	18
2018	Maine	23	11	6	0	1	4	2	6	4	19
2018	Maryland	470	388	345	1	10	32	39	30	13	20
2018	Massachusetts	136	93	37	0	1	55	25	13	5	21
2018	Michigan	550	394	166	17	11	200	31	99	26	22
2018	Minnesota	104	49	36	4	0	9	16	28	11	23
2018	Mississippi	142	118	99	3	2	14	7	15	2	24
2018	Missouri	555	473	235	16	9	213	40	32	10	25
2018	Montana	34	17	9	3	0	5	2	12	3	26
2018	Nebraska	43	26	22	0	1	3	6	9	3	27
2018	Nevada	201	134	46	1	1	86	23	24	20	28
2018	New Hampshire	21	12	6	0	0	6	3	4	2	29
2018	New Jersey	286	202	152	0	2	48	37	28	19	30

1 2 3 4

Last imported from the file table2018-2019.csv on 6/1/2022 1:22:13 PM

Parameters and starting matrix:

Advanced Analytics | Google Charts | Google Charts

oureports.net/OUReports/AdvancedAnalytics.aspx

Small Business Ban... CHASE Bank - Credi... Login TRYCACHE SQL MySQL: MySQL 8... Google Calendar... Online User Report... HelpDesk at RunRe... Google Earth Settings - Passwords HTML Tutorial Analytics | Realtime... Help Desk Other bookmarks

Online User Reporting

Recalculate Analytics Correlation Data and Statistics Report and Charts List of User Dashboards Analytics Matrix Balancing Help OUReports Help Log off

ShowByFilmByCategoryByTheater - Advanced Analytics - Matrix Balancing

Select Scenario: **3a: Balancing coefficients for matrix of aggregated field1 values and for iterations of multiple selected aggregated fields** Steps: 100 Precision: 1 Partial rows/columns: 0.0 adjust by start matrix

Enter: Get balancing coefficients for Starting Matrix of aggregated values of field1 and multiple Target Matrix of aggregated selected fields

Matrix rows by: CategoryName columns by: TheaterName

Matrix items by field1: TicketsSold aggregation function: Sum

Multiple fields: select all fields unselect all fields aggregation function: Sum

Length ReviewScore

(3a) Balancing coefficients for matrix of aggregated field1 values and for multiple selected aggregated fields

Done!

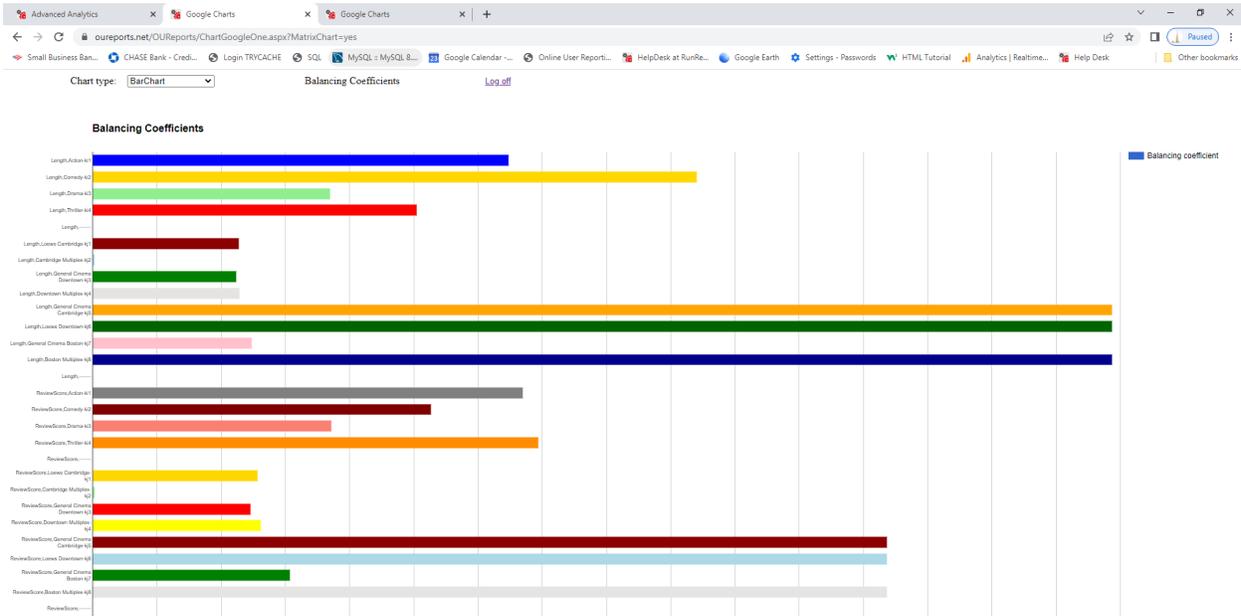
Starting Matrix of Sum of TicketsSold Export to Excel

CategoryName	Sum of Sum of Tickets Sold	Loews Cambridge	Cambridge Multiplex	General Cinema Downtown	Downtown Multiplex	General Cinema Cambridge	Loews Downtown	General Cinema Boston	Boston Multiplex
Action	510000	235000	0	235000	0	0	0	0	0
Comedy	240000	80000	0	80000	0	0	0	0	0
Drama	1419000	438000	0	250000	0	35000	188000	0	35000
Thriller	75000	0	0	0	25000	25000	0	25000	0
Total: 2244000	Sum of Sum of Tickets Sold by TheaterName:	773000	0	585000	518000	60000	188000	0	60000

Balancing coefficients Chart Export to Excel

Steps	h1	h2	h3	h4	h1	h2	h3	h4	h5	h6	h7	h8
Length	1.61955	2.35072	0.92362	1.26178	0.56894	0.0065	0.55836	0.57263	3.96848	3.96848	0.61963	3.96848
ReviewScore	1.67358	1.31635	0.92892	1.73399	0.64213	0.00708	0.61356	0.65403	3.09045	3.09045	0.76713	3.09045

Click on the link Chart in the Balancing Coefficients:



3b Scenario samples:

Report: Sample Sales Records by year in our Analytics from <http://OUReports.com>
Data:

The screenshot shows the 'Online User Reporting' interface. The main content area displays a table titled 'Data for report: Sample Sales Records by year'. The table has 15 columns: OrderYear, Region, Country, Item Type, Sales Channel, Order Priority, C Name, Order Date, Order ID, Ship Date, Units Sold, Unit Price, Unit Cost, Total Revenue, Total Cost, and Total Profit. The table contains 30 rows of data, with the first row being: 2010, Australia and Oceania, Tuvalu, Baby Food, Offline, H, 0, 5/28/2010, 669166000/6/27/2010, 9525, 255.28, 159.42, 2533650, 1582240, 951410, 1. The interface also includes a search bar, a 'Reset' button, and a 'Help for this page' link. A sidebar on the left contains navigation options like 'Log Off', 'List of Reports', and 'Explore Report Data'. At the bottom, it notes 'Last imported from the file SampleSalesRecordsYear.csv on 7/18/2022 11:08:40 AM'.

Parameters:

The screenshot shows the 'Advanced Analytics' interface. The main content area is titled 'OUReports Help' and 'Log off'. Below this, it says 'Sample Sales Records by year - Advanced Analytics - Matrix Balancing'. A dropdown menu is set to '3c: Balancing coefficients for matrix of rows and multiple cols for iterations between start and target of field2 values'. The 'Steps' are set to '100', 'Precision' to '1', and 'Partial rows/columns' to '0,0'. A checkbox 'adjust by start matrix' is checked. The description for '3c' is: 'Get balancing coefficients for Starting Matrix as rows by matrix group field for rows and columns from selected multiple fields, for all iterations between starting and target of the field2 values'. The 'Enter:' section shows 'Matrix rows by:' set to 'ItemType', 'Iterations by the field2:' set to 'OrderYear', 'starting value:' set to '2010', and 'and target value:' set to '2017'. There are two buttons: '(3b) Balancing matrix of rows and multiple columns for iterations of starting and target values of the field2' and '(3c) Balancing coefficients for matrix of rows and multiple cols for iterations between start and target of field2 values'.

Starting, Target, and Balancing Matrices:

Advanced Analytics

ouereports.net/OUReports/AdvancedAnalytics.aspx

Small Business Ban... CHASE Bank - Credit... Login TRYCACHE SQL MySQL = MySQL 8... Google Calendar... Online User Report... HelpDesk at RunR... Google Earth Settings - Passwords HTML Tutorial Analytics | Realtime... Help Desk Other bookmarks

UnitsSold UnitPrice UnitCost TotalRevenue TotalCost TotalProfit

(b) Balancing matrix of rows and multiple columns for iterations of starting and target values of the field2

(3c) Balancing coefficients for matrix of rows and multiple cols for iterations between start and target of field2 values

Balancing for sum of rows and columns of the starting matrix and sums of rows and columns of the target matrix.
Balancing precision: 0.10443, steps: 7, maximum difference of cells in balancing and target matrix = 668573.19, maximum difference of cells in balancing and starting matrix = 5396580.00

Starting Matrix for OrderYear=2010										Target Matrix for OrderYear=2017													
ItemType	Sum of row	ItemType	UnitsSold	UnitPrice	UnitCost	TotalRevenue	TotalCost	TotalProfit	ItemType	Sum of row	ItemType	UnitsSold	UnitPrice	UnitCost	TotalRevenue	TotalCost	TotalProfit						
Household	512346.81	3830	668.27	502.54	2559470	1824730	834746	Household	12004254.81	8974	668.27	502.54	5997060	4509790	1487260	Household	12004254.81	8974	668.27	502.54	5997060	4509790	1487260
Clothes	1342973.12	8116	109.28	35.84	668356	219191	449165	Clothes	1814370.12	8263	109.28	35.84	902981	296146	606835	Clothes	1814370.12	8263	109.28	35.84	902981	296146	606835
Cosmetics	6925110.53	7910	437.2	263.33	3458250	2082940	1375310	Cosmetics	1589551.53	8815	437.2	263.33	379318	477944	315574	Cosmetics	1589551.53	8815	437.2	263.33	379318	477944	315574
Personal Care	45035.98	273	81.73	56.67	22312.3	15470.9	6841.38	Personal Care	45988.3	8015	81.73	56.67	246416	170869	75555.0	Personal Care	45988.3	8015	81.73	56.67	246416	170869	75555.0
Meat	0	0	0	0	0	0	0	Meat	4027855.52	4767	421.89	364.69	2011160	1738480	276272	Meat	4027855.52	4767	421.89	364.69	2011160	1738480	276272
Cereal	0	0	0	0	0	0	0	Cereal	3570053.79	8656	265.7	117.11	1789540	1013700	768350	Cereal	3570053.79	8656	265.7	117.11	1789540	1013700	768350
Beverages	0	0	0	0	0	0	0	Beverages	0	0	0	0	0	0	0	Beverages	0	0	0	0	0	0	
Office Supplies	10802913.17	8287	851.21	524.96	5396580	4356340	1040230	Office Supplies	0	0	0	0	0	0	0	Office Supplies	0	0	0	0	0	0	
Vegetables	0	0	0	0	0	0	0	Vegetables	0	0	0	0	0	0	0	Vegetables	0	0	0	0	0	0	
Baby Food	5077639.7	9925	255.28	159.42	2533650	1582240	951410	Baby Food	0	0	0	0	0	0	0	Baby Food	0	0	0	0	0	0	
Fruits	114476.75	5822	8.33	6.92	54319.3	40286.2	14031	Fruits	0	0	0	0	0	0	0	Fruits	0	0	0	0	0	0	
Total: 29431796.06	Sum by columns:	42163	2212.3	1549.69	14692937.6	10215286	1447727.38	Total:	25745552.17	Sum by columns:	42817	2076.65	1437.62	12849615	8920863	3928742.9							

Balancing coefficients

Steps	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M1	M2	M3	M4	M5	M6	Precision	
1	1.544452	4.872110	2624	427450376	66756	12.58994767	427212	21395	59020253	6424	1.143180	0	0.025760	0.01260	0.00881	3.41444	257510	95239	11654594	36562
2	0.039290	793380	80822	1.67633	0.80563	1.67633	1.67633	1.67633	78814	1.67633	0.80664	0.83534	0.600640	597050	5969	1.052140	999260	86763	1456023	59686
3	1.006380	985180	9923	1.01942	0.98797	1.01942	1.01942	1.01942	98269	1.01942	0.99120	0.98609	0.9811	0.98097	0.98096	1.002161	0.00330	99239	70943	66579
4	1.000420	999920	99991	1.00008	0.99943	1.00008	1.00008	1.00008	99915	1.00008	0.99910	0.99930	0.99930	99912	99912	1.00001	1.000020	99964	1347	19573
5	1.000020	999970	99998	1.00004	0.99997	1.00004	1.00004	1.00004	99998	1.00004	0.99998	0.99997	0.99998	99998	99998	1	0.99998	157	1289	0
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Result:	1.2051	2.091780	2.103773	1.135301	84.361	10.01356	1312650911	24584	1163456408	45773	1.955360	1.955360	0	0.01517	0.00074	0.00051	1.41457	1.25700	0.81972	0.10443

Balancing Matrix

Item Type	Sum of row	Item Type	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit							
Clothes	1814370.12	8263	109.28	35.84	902981	296146	606835	Clothes	1814370.12	8263	109.28	35.84	902981	296146	606835
Household	12004254.81	8974	668.27	502.54	5997060	4509790	1487260	Household	12004254.81	8974	668.27	502.54	5997060	4509790	1487260
Cosmetics	1589551.53	8815	437.2	263.33	379318	477944	315574	Cosmetics	1589551.53	8815	437.2	263.33	379318	477944	315574
Personal Care	45988.3	8015	81.73	56.67	246416	170869	75555.0	Personal Care	45988.3	8015	81.73	56.67	246416	170869	75555.0
Meat	4027855.52	4767	421.89	364.69	2011160	1738480	276272	Meat	4027855.52	4767	421.89	364.69	2011160	1738480	276272
Cereal	3570053.79	8656	265.7	117.11	1789540	1013700	768350	Cereal	3570053.79	8656	265.7	117.11	1789540	1013700	768350
Beverages	0	0	0	0	0	0	0	Beverages	0	0	0	0	0	0	0
Office Supplies	0	0	0	0	0	0	0	Office Supplies	0	0	0	0	0	0	0
Vegetables	0	0	0	0	0	0	0	Vegetables	0	0	0	0	0	0	0
Baby Food	0	0	0	0	0	0	0	Baby Food	0	0	0	0	0	0	0
Fruits	0	0	0	0	0	0	0	Fruits	0	0	0	0	0	0	0
Total:	25745552.17	Sum by columns:	42817	2076.65	1437.62	12849615	8920863	3928742.9							

Crime 2018-2019 in our Analytics from <http://OUReports.com> Data:

Interactive Reporting

ouereports.net/OUReports/ShowReport.aspx?rtd=0

Small Business Ban... CHASE Bank - Credit... Login TRYCACHE SQL MySQL = MySQL 8... Google Calendar... Online User Report... HelpDesk at RunR... Google Earth Settings - Passwords HTML Tutorial Analytics | Realtime... Help Desk Other bookmarks

Online User Reporting

Log Off

List of Reports

Report Definition

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Report Format Definition

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Export Data to CSV

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Export Report to Excel

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Show Analytics

See Statistics

Export Statistics to Excel

See Fields Correlation

Matrix Balancing

Hide duplicate records

Export delimitator:

Reset

Help for this page

Data for report: Crime 2018-2019

Search:

Records returned: 101

Year	States	Total Murders	Total Firearms	Handguns	Rifles	Shotguns	Firearms unknown	Knives/cutting instruments	Other Weapons	Handcuffs	feetc	Indx
2018	Alabama	2	2	2	0	0	0	0	0	0	0	1
2018	Alaska	47	31	7	3	0	21	8	3	5	2	2
2018	Arizona	339	203	139	12	6	46	45	87	4	3	3
2018	Arkansas	218	156	66	6	5	79	17	38	7	4	4
2018	California	1739	1177	834	24	27	292	252	223	87	5	5
2018	Colorado	207	147	99	2	0	38	27	13	20	6	6
2018	Connecticut	83	54	10	2	0	42	18	9	2	7	7
2018	Delaware	48	40	14	1	2	23	4	3	1	8	8
2018	District of Columbia	151	120	120	0	0	0	20	7	4	9	9
2018	Georgia	568	460	410	11	10	29	44	62	2	10	10
2018	Hawaii	33	11	6	1	0	4	10	6	6	11	11
2018	Idaho	32	19	14	2	2	1	4	8	1	12	12
2018	Illinois	864	708	592	14	4	98	77	53	26	13	13
2018	Indiana	371	294	136	10	7	141	33	29	15	14	14
2018	Iowa	43	20	6	2	2	10	8	9	6	15	15
2018	Kansas	110	78	47	0	2	29	7	19	6	16	16
2018	Kentucky	237	179	112	12	6	49	17	32	9	17	17
2018	Louisiana	521	436	233	12	5	186	30	44	11	18	18
2018	Maine	23	11	6	0	1	4	2	6	4	19	19
2018	Maryland	470	388	345	1	10	32	39	30	13	20	20
2018	Massachusetts	136	93	37	0	1	55	25	13	5	21	21
2018	Michigan	550	394	166	17	11	200	31	99	20	22	22
2018	Minnesota	104	49	36	4	0	9	16	28	11	23	23
2018	Mississippi	142	118	99	2	14	7	15	2	24	24	24
2018	Missouri	565	473	235	16	9	213	40	32	10	25	25
2018	Montana	34	17	9	3	0	5	2	12	3	26	26
2018	Nebaska	43	26	22	0	1	3	5	9	3	27	27
2018	Nevada	201	134	46	1	1	86	23	24	20	26	26
2018	New Hampshire	21	12	6	0	0	6	3	4	2	29	29
2018	New Jersey	286	202	152	0	2	48	37	28	19	30	30

1 2 3 4

Last imported from the file table2018-2019.csv on 6/1/2022 1:22:13 PM

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Advanced Analytics x + localhost55176/AdvancedAnalytics.aspx

Online User Reporting

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crime 2018-2019 - Advanced Analytics - Matrix Balancing

Select Scenario: (3) Balancing matrix of rows and multiple columns for iterations of starting and target values of the field2 Steps: 100 Precision: 1 Partial rows/columns: 0.0 adjust by start matrix

Start Matrix as rows by matrix group field for rows and selected multiple columns to balance iterations from starting to target values of the field2

Enter:

Matrix rows by: States

Iterations by the field2: Year starting value: 2018 and target value: 2019

Multiple fields: select all fields unselect all fields

TotalMurders, TotalFirearms, Handguns, Rifles, Shotguns, Firearm

Year States TotalMurders TotalFirearms Handguns Rifles Shotguns Firearmtypeunknown

Target Matrix

Balancing Matrix

Advanced Analytics x + localhost55176/AdvancedAnalytics.aspx

Online User Reporting

Recalculate Analytics Correlation Data and Statistics Report and Charts List of User Dashboards Analytics Matrix Balancing Help OURports Help Log off

crime 2018-2019 - Advanced Analytics - Matrix Balancing

Select Scenario: (3) Balancing matrix of rows and multiple columns for iterations of starting and target values of the field2 Steps: 100 Precision: 1 Partial rows/columns: 0.0 adjust by start matrix

Start Matrix as rows by matrix group field for rows and selected multiple columns to balance iterations from starting to target values of the field2

Enter:

Matrix rows by: States

Iterations by the field2: Year starting value: 2018 and target value: 2019

Multiple fields: select all fields unselect all fields

TotalMurders, TotalFirearms, Handguns, Rifles, Shotguns, Firearm

(3) Balancing matrix of rows and multiple columns for iterations of starting and target values of the field2

(3) Balancing coefficients for matrix of rows and multiple cols for iterations between start and target of field2 values

Balancing for sum of rows and columns of the starting matrix and sums of rows and columns of the target matrix:
 yes, balanced, precision: 0.46383, steps: 3, maximum difference of cells in balancing and target matrices = 84.00, maximum difference of cells in balancing and starting matrices = 225.03

Starting Matrix for Year = 2018

States	Sum of row States	TotalMurders	TotalFirearms	Handguns	Rifles	Shotguns	Firearmtypeunknown	Knivescuttinginstruments	OtherWeapons	Handsfistsfeetetc
Alabama	6	2	2	2	0	0	0	0	0	0
Alaska	125	47	31	7	0	0	21	8	3	5
Arizona	881	339	203	139	12	6	46	45	87	4
Arkansas	592	218	156	86	6	5	79	17	38	7
California	4655	1739	1177	834	24	27	292	252	223	67
Colorado	561	207	147	99	2	8	33	27	13	20
Connecticut	220	83	54	10	2	0	42	18	9	2
Delaware	136	48	40	14	0	0	23	8	3	1
District of Columbia	422	151	120	820	0	0	0	20	7	4
Florida	0	0	0	0	0	0	0	0	0	0
Georgia	1596	568	460	410	11	10	29	44	62	2
Hawaii	77	33	11	6	1	0	4	10	6	5
Idaho	83	32	19	14	2	2	1	4	8	1
Illinois	2436	864	708	592	14	4	98	77	53	26
Indiana	1036	371	294	136	10	7	141	33	29	15
Iowa	106	43	20	8	2	2	10	8	9	6
Kansas	298	110	78	47	0	2	29	7	19	6
Kentucky	653	237	179	112	12	6	49	17	32	9
Louisiana	1478	521	436	233	12	5	186	30	44	11
Maine	57	23	11	6	0	1	4	2	6	4
Maryland	1328	470	388	346	1	10	32	39	30	13
Massachusetts	365	136	93	37	0	1	55	25	13	5
Michigan	1494	550	394	166	17	11	200	31	99	26
Minnesota	297	104	49	36	4	0	9	16	28	11
Mississippi	402	142	118	99	3	2	14	7	15	2
Missouri	1583	555	473	235	16	9	213	40	32	10
Montana	85	34	17	5	3	0	5	2	12	3
Nebraska	112	43	26	22	0	1	3	8	9	3
Nevada	536	201	134	46	1	1	86	23	24	20

On right:

State	Total Murders	Total Firearms	Handguns/Rifles	Shotguns	Firearmstypunknow	Knivescuttinginstruments	Other Weapons	Handsafestats
South Carolina	1271	445	381	224	9	8	140	22
South Dakota	45	19	7	4	0	0	7	15
Tennessee	1387	468	391	173	13	7	158	41
Texas	3822	1379	1064	568	72	21	403	127
Utah	173	66	41	18	1	8	16	8
Vermont	30	11	8	3	0	0	8	2
Virginia	1177	427	323	150	15	9	149	40
Washington	523	194	135	89	5	3	38	23
West Virginia	192	72	48	23	7	2	16	6
Wisconsin	475	178	119	53	3	3	60	27
Wyoming	35	13	9	7	0	0	9	0
Total: 38112	Sum by columns:	13927	10258	6368	364	200	1326	1476

States	Sum of row States	Total Murders	Total Firearms	Handguns/Rifles	Shotguns	Firearmstypunknow	Knivescuttinginstruments	Other Weapons	Handsafestats
Alabama	10.99	3.66	3.72	3.61	0	0	0	0	
Alaska	182	67.45	45.21	9.89	5.29	0	32.36	11.29	
Arizona	887	340.56	207.25	137.54	14.82	5.11	49.62	44.48	
Arkansas	636	233.16	169.56	89.53	7.89	4.53	90.73	17.89	
California	4500	1678.57	1154.55	792.89	28.47	22.1	302.66	239.3	
Colorado	553	204.15	147.33	96.16	2.42	6.69	40.24	26.2	
Connecticut	273	101.42	87.05	12.03	0	0	55.11	21.64	
Delaware	135.13	47.38	40.13	13.61	4.21	1.67	24.38	3.88	
District of Columbia	468	167.82	135.53	131.36	0	0	0	21.87	
Florida	1257	447.04	367.92	317.83	10.64	6.67	24.51	34.07	
Georgia	73	31.47	10.66	5.64	1.37	0	4.1	9.38	
Hawaii	85.08	33.22	20.04	14.31	2.95	1.76	1.19	4.09	
Idaho	2189	774.43	644.91	522.63	15.42	10.4	94.32	67.9	
Illinois	679	240.6	193.76	86.87	7.97	3.85	98.19	21.05	
Indiana	152	61.68	29.15	8.48	3.53	2.43	15.4	11.29	
Iowa	242	89.07	64.18	37.48	8	1.37	25.21	5.58	
Kansas	616	222.16	170.52	103.41	13.82	4.77	49.32	15.68	
Kentucky	1477	515.12	438.08	226.9	14.58	4.19	197.48	29.18	
Maine	52.2	21.57	10.48	5.54	0	0	4.03	1.85	
Maryland	1562	553.27	464.16	400	1.45	9.98	40.45	45.17	
Massachusetts	377.13	139.55	96.98	37.39	0	0	60.6	25.24	
Michigan	1481	540.28	393.32	160.61	20.52	9.16	210.97	29.96	
Minnesota	307	124.59	59.66	42.48	8.89	0	11.58	18.86	
Mississippi	521	187.14	158.03	128.5	4.86	2.23	19.81	5.08	
Missouri	1618	560.49	485.44	233.75	19.86	7.71	230.99	39.74	
Montana	70	27.88	14.17	7.27	3.02	0	4.4	1.61	
Nebraska	124.05	48.25	29.65	24.32	0	0	3.61	8.92	
Nevada	385.51	144.33	91.78	32.83	0	0	16.33	15.25	
New Hampshire	82	31.82	18.48	8.95	0	0	9.76	4.47	
New Jersey	700	256.52	185.56	136.33	1.53	46.59	32.9	24.34	
New York	1562	553.27	464.16	400	1.45	9.98	40.45	45.17	

3c Scenario samples:

Report: Sample Sales Records by year in our Analytics from <http://OUReports.com>
Data:

Interactive Reporting

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Matrix Balancing

Reset Help for this page

Data for report: Sample Sales Records by year

Records returned: 100

Order/Year/Region	Country	Item Type	Sales Channel	Order Priority	Name/6	Order Date	Order ID	Ship Date	Units Sold	Unit Price	Unit Cost	Total Revenue	Total Cost	Total Profit	Index
2010	Australia and Oceania	Turkey	Baby Food	Offline	H	0	5/28/2010	869186000/6/27/2010	9925	255.28	159.42	2533650	1582240	951410	1
2012	Central America and the Caribbean	Orenada	Cereal	Online	C	0	9/22/2012	963981000/9/15/2012	2904	205.7	117.11	578763	329376	249406	2
2014	Europe	Russia	Office Supplies	Offline	L	0	5/2/2014	341417000/5/8/2014	1779	651.21	524.96	1158580	933904	224599	3
2014	Sub-Saharan Africa	Sao Tome and Principe	Fruits	Online	C	0	6/20/2014	514322000/7/6/2014	8102	9.33	6.92	75591.7	56065.8	19525.8	4
2013	Sub-Saharan Africa	Rwanda	Office Supplies	Offline	L	0	2/12/2013	115457000/2/6/2013	5062	651.21	524.96	3296420	2657350	639070	5
2015	Australia and Oceania	Solomon Islands	Baby Food	Online	C	0	2/4/2015	547996000/2/1/2015	2974	655.28	159.42	759203	474115	285088	6
2011	Sub-Saharan Africa	Angola	Household	Offline	M	0	4/23/2011	135425000/4/27/2011	4187	668.27	502.54	2798050	2104410	693912	7
2012	Sub-Saharan Africa	Burkina Faso	Vegetables	Offline	H	0	7/17/2012	871544000/7/27/2012	8082	154.06	90.93	1245110	734896	510217	8
2015	Sub-Saharan Africa	Republic of the Congo	Personal Care	Offline	M	0	7/14/2015	770463000/8/25/2015	6070	81.73	56.67	498101	343987	152114	9
2014	Sub-Saharan Africa	Senegal	Cereal	Online	H	0	4/18/2014	616607000/5/30/2014	6593	205.7	117.11	1356180	712706	584074	10
2011	Asia	Kyrgyzstan	Vegetables	Offline	H	0	6/24/2011	814712000/7/12/2011	124	154.06	90.93	19103.4	11275.3	7828.12	11
2014	Sub-Saharan Africa	Cape Verde	Clothes	Offline	H	0	8/2/2014	939826000/8/19/2014	4168	109.28	35.84	455479	149381	306098	12
2017	Asia	Bangladesh	Clothes	Online	L	0	11/3/2017	107311000/3/1/2017	8263	109.28	35.84	902961	296146	606815	13
2017	Central America and the Caribbean	Honduras	Household	Offline	H	0	2/8/2017	522840000/2/13/2017	8974	668.27	502.54	5997060	4509790	1487260	14
2014	Asia	Mongolia	Personal Care	Offline	C	0	2/19/2014	832401000/2/23/2014	4901	81.73	56.67	406559	277740	128819	15
2012	Europe	Bulgaria	Clothes	Offline	M	0	4/23/2012	972292000/6/3/2012	1673	109.28	35.84	182825	89960.3	122865	16
2016	Asia	Sri Lanka	Cosmetics	Offline	M	0	11/9/2016	414914000/12/18/2016	16952	437.2	263.33	3039410	1839070	1208740	17
2015	Sub-Saharan Africa	Cameroon	Beverages	Offline	C	0	4/1/2015	519821000/4/18/2015	5430	47.45	31.79	267654	172620	86033.8	18
2010	Asia	Turkmenistan	Household	Offline	L	0	12/30/2010	441619000/1/20/2011	3830	668.27	502.54	2559470	1924790	634746	19
2012	Australia and Oceania	East Timor	Meat	Online	L	0	7/31/2012	322086000/9/11/2012	5988	421.89	364.69	2492530	2164990	337938	20
2014	Europe	Norway	Baby Food	Online	L	0	5/14/2014	819038000/6/28/2014	7450	255.28	159.42	1901840	1187680	714157	21
2015	Europe	Portugal	Baby Food	Offline	H	0	7/31/2015	860674000/9/30/2015	1273	255.28	159.42	324971	202842	122030	22
2016	Central America and the Caribbean	Honduras	Snacks	Online	L	0	6/30/2016	795491000/7/26/2016	2225	152.58	97.44	339490	216804	122686	23
2014	Australia and Oceania	New Zealand	Fruits	Online	L	0	9/8/2014	14227000/10/4/2014	2167	9.33	6.92	20404.7	15134	5270.67	24
2016	Europe	Moldova	Personal Care	Offline	L	0	5/7/2016	740148000/5/10/2016	5070	81.73	56.67	414371	287317	127054	25
2017	Europe	France	Cosmetics	Offline	H	0	5/22/2017	898523000/6/5/2017	1815	437.2	263.33	793518	477944	315574	26
2014	Australia and Oceania	Kiribati	Fruits	Offline	M	0	10/13/2014	347140000/11/10/2014	5398	9.33	6.92	50363.3	37354.2	13009.2	27
2010	Sub-Saharan Africa	Mali	Fruits	Online	L	0	6/7/2010	686040000/5/10/2010	8622	33	6.92	54319.3	4028.2	1431	28
2014	Europe	Norway	Beverages	Offline	C	0	7/18/2014	435609000/7/30/2014	5124	47.45	31.79	243134	162892	80241.8	29
2012	Sub-Saharan Africa	The Gambia	Household	Offline	L	0	5/26/2012	886495000/6/9/2012	2370	668.27	502.54	1583800	1191020	392780	30

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Parameters:

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Sample Sales Records by year - Advanced Analytics - Matrix Balancing

Select Scenario: 3c: Balancing coefficients for matrix of rows and multiple cols for iterations between start and target of field2 values Steps: 100 Precision: 1 Partial rows/columns: 0,0 adjust by start matrix

3c: Get balancing coefficients for Starting Matrix as rows by matrix group field for rows and columns from selected multiple fields, for all iterations between starting and target of the field2 values

Enter:
Matrix rows by: ItemType
Iterations by the field2: OrderYear starting value: 2010 and target value: 2017
Multiple fields: select all fields unselect all fields
UnitsSold,UnitPrice,UnitCost,TotalRevenue,TotalCost,TotalPr

(3b) Balancing matrix of rows and multiple columns for iterations of starting and target values of the field2

(3c) Balancing coefficients for matrix of rows and multiple cols for iterations between start and target of field2 values

Starting Matrix and Balancing Coefficients by year:

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Sample Sales Records by Year - Advanced Analytics - Matrix Balancing

Select Scenario: 3c: Balancing coefficients for matrix of rows and multiple cols for iterations between start and target of field2 values Steps: 100 Precision: 1 Partial rows/columns: 0,0 adjust by start matrix

3c: Get balancing coefficients for Starting Matrix as rows by matrix group field for rows and columns from selected multiple fields, for all iterations between starting and target of the field2 values

Enter:
Matrix rows by: ItemType
Iterations by the field2: OrderYear starting value: 2010 and target value: 2017
Multiple fields: select all fields unselect all fields
UnitsSold,UnitPrice,UnitCost,TotalRevenue,TotalCost,Total

(3b) Balancing matrix of rows and multiple columns for iterations of starting and target values of the field2

(3c) Balancing coefficients for matrix of rows and multiple cols for iterations between start and target of field2 values

Done!

Starting Matrix of Item Type and UnitsSold,UnitPrice,UnitCost,TotalRevenue,TotalCost,TotalProfit for Order Year = 2010	Export to Excel
Item Type	Sum of row Item Type Units Sold Unit Price Unit Cost Total Revenue Total Cost Total Profit
Clothes	1342973.12 6116 109.26 35.84 688356 219197 449159
Household	5122946.81 3630 866.72 502.64 2558470 1924730 634746
Cosmetics	6925110.53 7810 437.2 263.33 3458250 2082940 1375310
Snacks	0 0 0 0 0 0 0
Personal Care	45035.98 273 81.73 56.67 22312.3 15470.9 6841.38
Meat	0 0 0 0 0 0 0
Cereal	0 0 0 0 0 0 0
Beverages	0 0 0 0 0 0 0
Office Supplies	10802613.17 3287 551.21 524.96 5395580 4350340 1046230
Vegetables	0 0 0 0 0 0 0
Baby Food	5077639.7 9926 255.28 159.42 2533650 1582240 951410
Fruits	114476.75 5822 0.33 6.92 44319.3 46288.2 14031
Total: 29431796.06	Sum by columns: 42163 2212.3 1549.68 14692937.6 10215266.14477727.38

Balancing coefficients	Export to Excel
Steps k11 k12 k13 k14 k15 k16 k17 k18 k19 k110 k111 k112 k11 k12 k13 k14 k15 k16 Precision	
2011 0.2455911769150 0 703262442.27616 0 0 3.3732 0 3.3732 439774364.46112 1.07218648711101 53082 0 1.83277 0.03250100018100013 1.187081.097710.891220.45081	
2012 1.071211.0904441.8761791.69622 16.55525137751103.0737 241083950.11013 1.69622 0.188365510349680.0296 0.688580.07359 0.022230.001250.000891.237731.176460.845750.76733	
2013 0 0 1.959612.93957 12.542622.93957 137531425.34695 2.93957 0.969732.93957 0.768802.18966 0.291290.018920.013391.013481.066480.968510.7681	
2014 1.321321.8324 1.926482.03937 16.254642.03937 92427454.76548 306071813.82851 0.216262.03937 0.568860.98327 0.047650.002170.0015 1.122881.057830.976590.91473	
2015 1.667712.96602 0.496852.59525 29.238892.59525 2.59525 225275081.4406 0.485612.59525 0.177180.16621 0.1014 0.013690.009651.021461.014020.986540.09914	
2016 2.229210 1.99816559517797.9633945.234014.92638 32604363.60144 36699354.27606 0.27579.371104573.60766 0 0.043930.003030.002611.171461.08078.968690.46766	
2017 1.3051 2.091780.21037731135301.8436110.013561312650911.245841163456408.457731.95536 0 1.95536 0 0 0.015170.000740.000511.414571.257080.819720.10443	

Crime 2018-2019 in our Analytics from <http://OUReports.com> Data:

Online User Reporting

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Data for report: Crime 2018-2019 Search:

Records returned: 101

Year\ States	TotalMurders	TotalFirearms	Handguns	Rifles	Shotguns	Firearmstypunknown	Knivescuttinginstruments	OtherWeapons	Hands	Hats	Feet	etc	Link
2018\Alabama	2	2	2	0	0	0	0	0	0	0	0	0	1
2018\Alaska	47	31	7	3	0	21	8	3	5	2			2
2018\Arizona	339	203	139	12	6	46	45	87	4	3			3
2018\Arkansas	218	156	66	6	5	79	17	38	7	4			4
2018\California	1177	834	24	27	292	252	223	87	5				5
2018\Colorado	207	147	99	2	8	38	27	13	20	6			6
2018\Connecticut	83	54	10	2	0	42	18	9	2	7			7
2018\Delaware	48	40	14	1	2	23	4	3	1	8			8
2018\District of Columbia	151	120	0	0	0	0	20	7	4	9			9
2018\Georgia	568	460	410	11	10	29	44	62	2	10			10
2018\Hawaii	13	11	6	1	0	4	10	6	6	11			11
2018\Idaho	32	19	14	2	2	1	4	8	1	12			12
2018\Illinois	864	708	592	14	4	98	77	53	26	13			13
2018\Indiana	371	294	136	10	7	141	33	29	15	14			14
2018\Iowa	43	20	6	2	2	10	8	9	6	15			15
2018\Kansas	110	78	47	0	2	29	7	19	6	16			16
2018\Kentucky	237	179	112	12	6	49	17	32	9	17			17
2018\Louisiana	521	436	233	12	5	186	30	44	11	18			18
2018\Maine	23	11	6	0	1	4	2	6	4	19			19
2018\Maryland	470	388	345	1	10	32	39	30	13	20			20
2018\Massachusetts	136	93	37	0	1	55	25	13	5	21			21
2018\Michigan	550	394	166	17	11	200	31	99	26	22			22
2018\Minnesota	104	49	36	4	0	9	16	28	11	23			23
2018\Mississippi	142	118	99	3	2	14	7	15	2	24			24
2018\Missouri	555	473	235	16	9	213	40	32	10	25			25
2018\Montana	34	17	9	3	0	5	2	12	3	26			26
2018\Nebraska	43	26	22	0	1	3	5	9	3	27			27
2018\Nevada	201	134	46	1	1	86	23	24	20	28			28
2018\New Hampshire	21	12	6	0	0	3	1	4	2	29			29
2018\New Jersey	286	202	152	0	2	48	37	28	19	30			30

1 2 3 4

Last imported from the file table2018-2019.csv on 6/1/2022 1:22:13 PM

Online User Reporting

Reconcile Analytics Correlation Data and Statistics Report and Charts List of User Dashboards Analytics [Matrix Balancing Help](#) [OUReports Help](#) [Log off](#)

crime 2018-2019 - Advanced Analytics - Matrix Balancing

Select Scenario: (3) Balancing matrix of rows and multiple columns for iterations of starting and target values of the field2 Steps: 100 Precision: 1 Partial rows/columns: 0.0

Enter: Starting Matrix as rows by matrix group field for rows and selected multiple columns to balance iterations from starting to target values of the field2

Matrix rows by: States starting value: 2018 and target value: 2019

Iterations by the field2: Year starting value: 2018 and target value: 2019

Multiple fields: select all fields unselect all fields

TotalMurders, TotalFirearms, Handguns, Rifles, Shotguns, Firearmstypunknown, Knivescuttinginstruments, OtherWeapons, Hands, Hats, Feet, etc

(3) Balancing matrix of rows and multiple columns for iterations of starting and target values of the field2

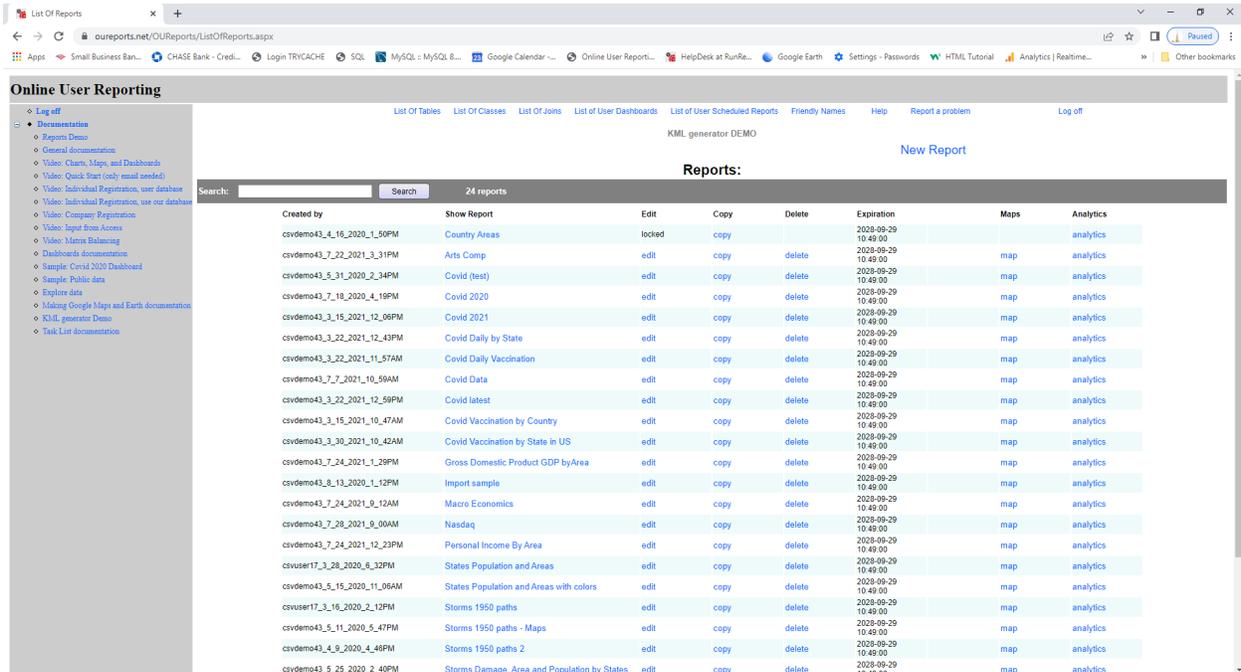
(3) Balancing coefficients for matrix of rows and multiple cols for iterations between start and target of field2 values

Done!

Starting Matrix of States and TotalMurders, TotalFirearms, Handguns, Rifles, Shotguns, Firearmstypunknown, Knivescuttinginstruments, OtherWeapons, Hands, Hats, Feet, etc for Year = 2018

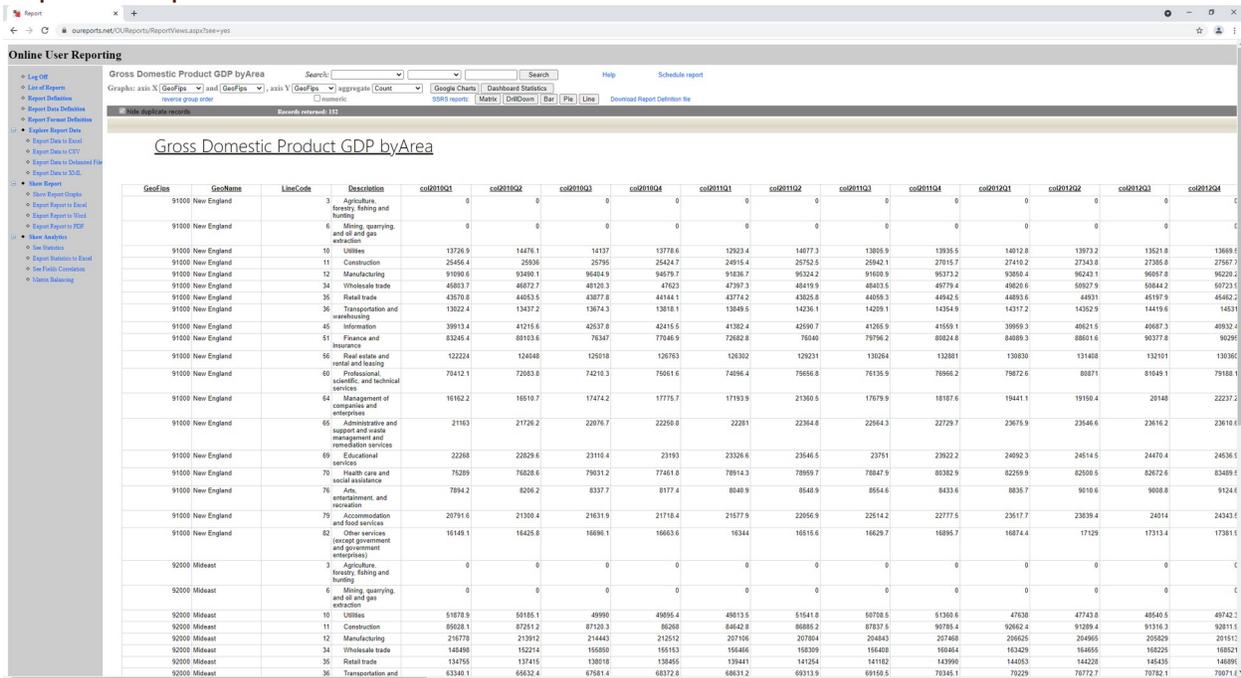
States	Sum of row States	TotalMurders	TotalFirearms	Handguns	Rifles	Shotguns	Firearmstypunknown	Knivescuttinginstruments	OtherWeapons	Hands	Hats	Feet	etc
Alabama	6	2	2	2	0	0	0	0	0	0	0	0	0
Alaska	125	47	31	7	3	0	21	8	3	5	2		2
Arizona	881	339	203	139	12	6	46	45	87	4	3		3
Arkansas	592	218	156	66	6	5	79	17	38	7	4		4
California	4655	1177	834	24	27	292	252	223	87	5			5
Colorado	561	207	147	99	2	8	38	27	13	20	6		6
Connecticut	220	83	54	10	2	0	42	18	9	2	7		7
Delaware	136	48	40	14	1	2	23	4	3	1	8		8
District of Columbia	422	151	120	0	0	0	0	20	7	4	9		9
Florida	0	0	0	0	0	0	0	0	0	0	0		0
Georgia	1596	568	460	410	11	10	29	44	62	2	10		10
Hawaii	77	13	11	6	1	0	4	10	6	6	11		11
Idaho	83	32	19	14	2	2	1	4	8	1	12		12
Illinois	2436	864	708	592	14	4	98	77	53	26	13		13
Indiana	1036	371	294	136	10	7	141	33	29	15	14		14
Iowa	106	43	20	6	2	2	10	8	9	6	15		15
Kansas	298	110	78	47	0	2	29	7	19	6	16		16
Kentucky	653	237	179	112	12	6	49	17	32	9	17		17
Louisiana	1478	521	436	233	12	5	186	30	44	11	18		18
Maine	57	23	11	6	0	1	4	2	6	4	19		19
Maryland	1528	470	388	345	1	10	32	39	30	13	20		20
Massachusetts	365	136	93	37	0	1	55	25	13	5	21		21
Michigan	1494	550	394	166	17	11	200	31	99	26	22		22
Minnesota	257	104	49	36	4	0	9	16	28	11	23		23
Mississippi	402	142	118	99	3	2	14	7	15	2	24		24
Missouri	1583	555	473	235	16	9	213	40	32	10	25		25
Montana	85	34	17	9	3	0	5	2	12	3	26		26
Nebraska	112	43	26	22	0	1	3	5	9	3	27		27
Nevada	536	201	134	46	1	1	86	23	24	20	28		28

Click the button "Try it! Play with our Analytics". It will open the list of reports:



Click on the link for report "Gross Domestic Product GDP by Area". It will open the report:

Report: Gross Domestic Product GDP by Area in our Analytics from <http://OUReports.com>



Click on the link Matrix Balancing in the bottom of the left menu and select scenario 2a and assign the Partial rows/columns to 5,3.

Balance top left corner matrix (5 rows and 3 columns) and low right corner matrix (14 rows and 5 columns) and applying coefficients to the rest of starting matrix to get partially balanced matrix:

Target matrix:

Balancing coefficients for partial balancing:

Steps	k1	k2	k3	k4	k5	k6	k7	k8	k9	k10	k11	k12	k13	k14	k15	k16	k17	k18	k19	kj1	kj2	kj3	kj4	kj5	kj6	kj7	kj8		
1	0.92962	1.06015	1.0488	0.64521	1.18138															1.08325	0.98421	0.99564							
2	0.99827	1.00661	0.95067	1.00222	1.00668															1.00247	1.00032	0.99592							
3	0.99995	1.00021	0.99817	1.00016	1.0002															1.00009	1.00001	0.99986							
4	1	1.00001	0.99994	1.00001	1.00001															1	1	0.99999							
Result:	0.92797	1.0674	0.99517	0.64739	1.18834															1.08602	0.98454	0.98181							
1						0.86074	1.20235	0.97438	0.89712	1.14512	0.91757	0.5367	0.88161	1.09788	1.02695	1.02304	0.97171	0.88294	0.99719				0.91172	0.96087	1.08826	0.99072	1.06433		
2						1.01641	1.01029	1.00351	1.00002	1.01041	0.99928	0.95209	0.982	1.00022	1.00238	0.99745	0.99286	0.966	0.99713				0.99752	0.99862	1.00118	0.99937	1.00273		
3						1.00047	1.0003	1.00011	1.00004	1.00041	0.99970	0.982	0.99998	1	1.00011	0.99994	0.9998	0.99989	0.99988				0.99992	0.99995	1.00004	0.99998	1.0001		
4						1.00002	1.00001	1	1.00001	1	0.99994	1	1	1	1	1	1	1	1				1	1	1	1	1		
Result:						0.87529	1.2151	0.97791	0.89718	1.15752	0.91688	0.51003	0.88	1.09812	1.02951	1.02037	0.96457	0.87984	0.9942				0.90938	0.95949	1.08958	0.99007	1.06734		
Final:	0.92797	1.0674	0.99517	0.64739	1.18834	0.87529	1.2151	0.97791	0.89718	1.15752	0.91688	0.51003	0.88	1.09812	1.02951	1.02037	0.96457	0.87984	0.9942			1.08602	0.98454	0.98181	0.90938	0.95949	1.08958	0.99007	1.06734

Balancing Matrix of Sum of col2021Q1						
Description	Sum of Sum of col2021Q1 by Description	Far West	Great Lakes	Midwest	New England	New Englar
Accommodation and food services	566473.14	130218.22	68159.12	80360.59	27119.9	27119.9
Administrative and support and waste management and remediation services	701592.44	139545.08	97332.31	109156.95	31751.97	31751.97
Agriculture, forestry, fishing and hunting	197738.4	62058.15	26067.63	0	0	0
Arts, entertainment, and recreation	147728.57	39085.64	19005.86	28386.23	7183.57	7183.57
Construction	954960.41	184063.79	117927.41	140843.83	42521.05	42521.05
Educational services	257449.24	42215.06	34595.13	66262.11	27396.66	27396.66
Finance and insurance	1857772.2	260539.65	269975.94	521514.14	142179.25	142179.25
Health care and social assistance	1633716.25	283207.39	250765.9	290621.75	103488.83	103488.83
Information	1014716.41	282097.5	92196.92	223805.87	50334.09	50334.09
Management of companies and enterprises	452410.44	71634.18	77862.72	99789.73	26296.19	26296.19
Manufacturing	2486811.26	476356.22	482984.92	277053.48	117396.18	117396.18
Mining, quarrying, and oil and gas extraction	247016.33	33387.12	6763.9	0	0	0
Other services (except government and government enterprises)	436962.82	83680.82	62823.45	74535.8	19975.47	19975.47
Professional, scientific, and technical services	1744892.31	383509.57	207225.52	360872.67	108683.11	108683.11
Real estate and rental and leasing	3025345.6	732892.24	380127.51	549906.16	176869.16	176869.16
Retail trade	1321619.92	269333.55	182874.84	191663.09	84296	84296
Transportation and warehousing	818885.39	116564.86	91596.05	85162.5	17655.93	17655.93
Utilities	371635.6	59762.25	54075.78	63625.38	16976.19	16976.19
Wholesale trade	1320597.36	235119.12	199762.41	205792.85	64008.33	64008.33

Partially balancing matrix:

Balancing Matrix of Sum of col2021Q1									
Description	Sum of Sum of col2021Q1 by Description	Far West	Great Lakes	Midwest	New England	Plains	Rocky Mountain	Southeast	Southwest
Accommodation and food services	566473.14	130218.22	68159.12	80360.59	27119.9	29960.36	21537.94	137238.31	71858.71
Administrative and support and waste management and remediation services	701592.44	139545.08	97332.31	109156.95	31751.97	36635.69	24244.48	166347.12	96178.83
Agriculture, forestry, fishing and hunting	197738.4	62058.15	26067.63	0	0	39149.73	11113.64	35801.38	23547.88
Arts, entertainment, and recreation	147728.57	39085.64	19005.86	28386.23	7183.57	7584.21	5255.14	30781.9	10446.02
Construction	954960.41	184063.79	117927.41	140843.83	42521.05	60562.24	42479.03	222788.07	143775.5
Educational services	257449.24	42215.06	34595.13	66262.11	27396.66	13670.53	7080.22	46320.07	19909.46
Finance and insurance	1857772.2	260539.65	269975.94	521514.14	142179.25	140066.48	54107.61	308020.55	161368.58
Health care and social assistance	1633716.25	283207.39	250765.9	290621.75	103488.83	112119.04	51984.73	360404.57	181488.05
Information	1014716.41	282097.5	92196.92	223805.87	50334.09	51968.13	39146.24	183192.09	91975.58
Management of companies and enterprises	452410.44	71634.18	77862.72	99789.73	26296.19	40820.79	14550.62	91841.98	29614.22
Manufacturing	2486811.26	476356.22	482984.92	277053.48	117396.18	174241.03	72286.49	572710.63	313783.29
Mining, quarrying, and oil and gas extraction	247016.33	33387.12	6763.9	0	0	6033.75	27887.61	36528.97	136414.98
Other services (except government and government enterprises)	436962.82	83680.82	62823.45	74535.8	19975.47	27469.36	16895.81	101327.75	50254.36
Professional, scientific, and technical services	1744892.31	383509.57	207225.52	360872.67	108683.11	77988.68	65358.59	349800.33	191453.83
Real estate and rental and leasing	3025345.6	732892.24	380127.51	549906.16	176869.16	158579.59	111510.59	629133.37	286326.98
Retail trade	1321619.92	269333.55	182874.84	191663.09	84296	52026.93	313729.81	165204.88	
Transportation and warehousing	818885.39	116564.86	91596.05	85162.5	17655.93	47866.57	25884.63	146727.55	87427.31
Utilities	371635.6	59762.25	54075.78	63625.38	16976.19	24195.66	13002.82	88974.4	51023.14
Wholesale trade	1320597.36	235119.12	199762.41	205792.85	64008.33	95051.22	43159.76	290698.02	187005.63

Balancing algorithm for the whole matrix ignoring corners resulted in

Balancing of Whole Matrix																		
Description	Sum of col2020Q1 by Description	Far West	Great Lakes	Midwest	New England	Plains	Rocky Mountain	Southeast	Southwest									
Accommodation and food services	573458	134279.44	66861.39	81897.17	27504.81	30451.84	22040.75	138559.71	71862.89									
Administrative and support and waste management and remediation services	711421	144313.11	96148.63	115655.68	32295.67	37319.36	24882.16	160434.06	96462.34									
Agriculture, forestry, fishing and hunting	201737.61	64420.9	25742.06	0	0	40032.1	11449.11	36387.69	23706.65									
Arts, entertainment and recreation	157836.9	42475.57	19648.22	30487.21	7678	8118.48	5667.53	32752.49	11009.39									
Construction	940417.61	184806.63	112636.1	139757.46	41988.99	58994.86	42326.04	219010.25	139997.27									
Educational services	254031.79	42436.18	33082.22	65829.47	27086.33	13535.98	7063.12	45589.04	19409.46									
Finance and insurance	1805440.56	250122.47	254441.48	510627.67	138539.11	136685.88	53197.63	298702.13	155044.6									
Health care and social assistance	1640165.09	290079.36	244338.33	294189.15	104253.54	113117.22	52840.97	361066.79	180279.72									
Information	1227194.39	346503.4	107729.72	271685.22	68087.16	62875.52	47717.78	220311.91	109563.66									
Management of companies and enterprises	421661.79	68110.17	70425.05	93769.98	24590.58	38230.45	13729.52	85498.01	27307.24									
Manufacturing	2443956.22	478404.58	461432.23	274987.77	115957.19	172365.31	72044.74	563146.53	305617.86									
Mining, quarrying and oil and gas extraction	241122.13	33334.64	6424.29	0	0	5933.91	27631.87	35708.98	132088.44									
Other services (except government and government enterprises)	427486.7	83478.44	59618.5	73485.15	19598.71	26991.74	16726.58	98968.63	48618.95									
Professional, scientific, and technical services	1712500.09	383169.79	199595.97	356332.4	106797.3	76750.6	64803.52	342182.02	185508.48									
Real estate and rental and leasing	3000467.98	739601.39	365018.76	548952.51	175594.22	157673.03	111704.82	621784.05	280299.21									
Retail trade	1314921.61	273217.06	176474.59	192150.76	62347.45	84228.98	52375.53	311599.72	162527.52									
Transportation and warehousing	620272.01	119209.45	89110.86	86075.14	17758.9	48218.07	26270.31	146918.3	86710.98									
Utilities	368495	50481.3	52060.44	63637.17	16897.35	24119.48	13059.11	88162.16	50078.01									
Wholesale trade	1295737.41	235440.22	190297.97	203668.57	83041.99	93756.89	42891.41	285019.32	181614.13									
Total	19358324.08	3982092.1	2628446.71	3388738.48	1042737.3	1230298.4	708422.5	4909881.79	22267706.8									

acc Whole Matrix: maximum difference of cells in partially balancing and whole balancing matrixes = 64405.9, maximum difference of partially balancing rows coefficients and whole balancing rows coefficients = 0.77, maximum difference of partially balancing columns coefficients 0.03

The difference between partially and whole balancing is color coded and not significant.

Report: Personal income in our Analytics from http://OUReports.com

Personal income - Advanced Analytics - Matrix Balancing

Select Scenario: 2a Starting Matrix of aggregated field1 to balance for sums of rows and columns of the Target Matrix of the aggregated field2

Steps: 100 Precision: 1 Partial rows/columns: 4.2

Enter: Matrix rows by: GeoName columns by: Description

Matrix items by field1: c2020Q1 aggregation function: Sum

Iterations by field2: c2020Q4 aggregation function: Sum

(2a) Balancing matrix of field1 for the sums by rows and by columns of the matrix of field2

Balancing for sum of rows and columns of the starting matrix for sum values of the field1 'c2020Q1' and the target matrix for sum values of the field2 'c2020Q4':

Top Left Corner: yes, balanced, precision: 0.92839, steps: 2, Low Right Corner: yes, balanced, precision: 1, steps: 1, maximum difference of cells in selected parts of balancing and target matrix = 1543364.38, maximum difference of cells in selected parts of balancing and starting matrix = 1168564.38, maximum difference of cells in balancing and target matrix = 1808892.50, maximum difference of cells in balancing and starting matrix = 1823992.50

Starting Matrix of Sum of c2020Q1					Target Matrix of Sum of c2020Q4				
GeoName	Sum of Sum of c2020Q1 by GeoName	Per capita personal income (dollars) /2	Personal income (millions of dollars, seasonally adjusted)	Population (midperiod, persons) /1	GeoName	Sum of Sum of c2020Q4 by GeoName	Per capita personal income (dollars) /2	Personal income (millions of dollars, seasonally adjusted)	Population (midperiod, persons) /1
Far West	60393015	65965	3720010	56597100	Far West	60602186	69256	3820730	56612200
Great Lakes	49442022	53322	2590200	46889500	Great Lakes	49477329	55569	2601760	46820000
Midwest	52243969	68219	3332050	48843700	Midwest	52174224	68544	3401580	48702600
New England	15981853	70883	1053170	14857800	New England	16012451	73991	1099060	14548400
Plains	22700759	54459	1169600	21478700	Plains	22771659	56429	1213330	21501900
Rocky Mountain	13253040	55882	698458	12498700	Rocky Mountain	13390218	57669	726949	12605600
Southeast	89726587	49577	4263410	85403200	Southeast	90259766	51586	4425180	85783000
Southwest	44536177	51257	2186620	42698700	Southwest	45373811	52341	2254170	43067300
Total:	Sum of Sum of c2020Q1 by Description: 348679822	469904	18940518	329289400	Total:	Sum of Sum of c2020Q4 by Description: 350061644.01	486685	19641759	329932200

Balancing coefficients									
Steps	ki1	ki2	ki3	ki4	ki5	ki6	ki7	ki8	ki9
1	1	0.04698	0.03654	0.01699	0.03856			1.00127	0.99997
2	1	0.00011	1	0.99999				1.00001	
Result:	1.04699	0.03655	0.01699	0.03853				1.00128	0.99997
1				0.99722	1.00457	1.00042	1.00465		
Result:				0.99722	1.00457	1.00042	1.00465		1
Final:	1.04699	0.03655	0.01699	0.03853	0.99722	1.00457	1.00042	1.00465	1.00128

Balancing Matrix of Sum of c2020Q4				
GeoName	Sum of Sum of c2020Q4 by GeoName	Per capita personal income (dollars) /2	Personal income (millions of dollars, seasonally adjusted)	Population (midperiod, persons) /1
Far West	62339292.43	68115.44	3850084.49	56421092.5
Great Lakes	50526512.7	54561.02	2554958.56	47916993.1
Midwest	52377891.89	65481.07	3340486.7	49988834.12
New England	16383672.85	72665.87	1078255.64	15212707.54
Plains	22318527.85	53810.41	1149868.75	21115048.68
Rocky Mountain	13129595.2	55416.7	691736.09	12378865.42
Southeast	8848850.24	49356.12	4209867.5	84239635.62
Southwest	44511018.64	50834.26	2167729.49	42292454.9
Total:	Sum of Sum of c2020Q4 by Description: 473043.89		19043027.24	33054572.88

Balancing of Whole Matrix																		
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- Export Report to Excel
- Export Report to Word
- Export Report to PDF
- Show Analytics
- See Data Overall Statistics
- See Groups Statistics
- Export Statistics to Excel
- See Fields Correlation
- Matrix Balancing

Starting Matrix of Sum of c2020Q1				
GeoName	Sum of Sum of c2020Q1 by GeoName	Per capita personal income (dollars) Z	Personal income (millions of dollars, seasonally adjusted)	Population (midperiod, persons) Y
Far West	60393015	65905	1730010	56597100
Great Lakes	49442022	53322	2500200	46888500
Midwest	52243969	88219	3332050	48843700
New England	15981853	70083	1923170	14857800
Plains	22700759	54459	1169600	21476700
Rocky Mountain	13253040	55882	698458	12458700
Southwest	89726587	49977	4268410	85409200
Southwest	44538577	51257	2188620	42698700
Total: 348679822	Sum of Sum of c2020Q1 by Description:	469904	18940518	329269400

Target Matrix of Sum of c2020Q4				
GeoName	Sum of Sum of c2020Q4 by GeoName	Per capita personal income (dollars) Z	Personal income (millions of dollars, seasonally adjusted)	Population (midperiod, persons) Y
Far West	60602186	69256	3920730	56612200
Great Lakes	49473729	55569	2601760	46820000
Midwest	52174224	89844	3401580	48702800
New England	16012451	73991	1090600	14840400
Plains	22771659	56429	1213330	21501900
Rocky Mountain	13390218	57669	726949	12605600
Southwest	90297666	51586	4425180	85783000
Southwest	45373811	52341	2254170	43067300
Total: 350061644	Sum of Sum of c2020Q4 by Description:	486685	19641759	329933200

Balancing coefficients											
Steps	k1	k2	k3	k4	k5	k6	k7	k8	k1	k2	k3
1	1.04699	1.03654	1.01691	1.03856					1.00127	0.99997	
2	1.00001	1	1	0.99999					1.00001	1	
Result:	1.04699	1.03655	1.01691	1.03853					1.00128	0.99997	
F				0.99722	1.00457	1.00042	1.00465				1
Final:	1.04699	1.03655	1.01691	1.03853	0.99722	1.00457	1.00042	1.00465	1.00128	0.99997	1

Balancing Matrix of Sum of c2020Q4				
GeoName	Sum of Sum of c2020Q4 by GeoName	Per capita personal income (dollars) Z	Personal income (millions of dollars, seasonally adjusted)	Population (midperiod, persons) Y
Far West	62339292.43	68115.44	3850084.49	58421092.5
Great Lakes	50526512.7	54561.02	2554952.58	47916993.1
Midwest	52377801.89	83481.07	3340486.7	48568834.12
New England	16363672.05	72668.87	1078295.64	1521207.54
Plains	22318527.85	53610.41	1149868.75	21115048.68
Rocky Mountain	13129599.2	55416.7	691736.09	12378806.42
Southwest	88498859.24	49356.12	4209867.5	84239635.62
Southwest	44511918.64	50834.26	2167729.49	42292454.9
Total: 350061644.01	Sum of Sum of c2020Q4 by Description:	473043.89	19043027.24	330545572.88

Balancing coefficients for Whole Matrix											
Steps	k1	k2	k3	k4	k5	k6	k7	k8	k1	k2	k3
1	1.00346	1.00071	0.99867	1.00191	1.00312	1.01035	1.00594	1.00969	1.03164	1.03322	0.99804
2	0.99976	1.00014	0.99967	0.99949	1.00006	0.99996	1.00026	1.0002	1.00009	1.00003	1
3	1	1	1	1	1	1	1	1	1	1	1
Result:	1.00321	1.00085	0.99833	1.0014	1.00319	1.01031	1.00621	1.00989	1.03174	1.03325	0.99804

Balancing of Whole Matrix				
GeoName	Sum of Sum of c2020Q4 by GeoName	Per capita personal income (dollars) Z	Personal income (millions of dollars, seasonally adjusted)	Population (midperiod, persons) Y
Far West	60602186.02	68214.9	3864413.12	56667567.99
Great Lakes	49477328.99	55061.38	2585549.23	46836718.38
Midwest	52174224.02	70266.85	3437115	48666842.17
New England	16012451.01	73235.21	1089716.96	14845450.85
Plains	22771659	56366.45	1212343.73	21502948.82
Rocky Mountain	13390218	58250.03	729124.89	12602843.08
Southwest	90297669.97	51883.27	4437728.14	85770154.55
Southwest	45373810.99	53406.9	2283767.93	43036636.15
Total: 350061643.98	Sum of Sum of c2020Q4 by Description:	486684.99	19641759	329933199.99

Compare Partially Balanced Matrix with Balanced Whole Matrix: maximum difference of cells in partially balancing and whole balancing matrix = 1753534.51, maximum difference of partially balancing rows coefficients and whole