

Income Inequality in the US around the Global Financial Crisis: An Analysis Based on Age Groups

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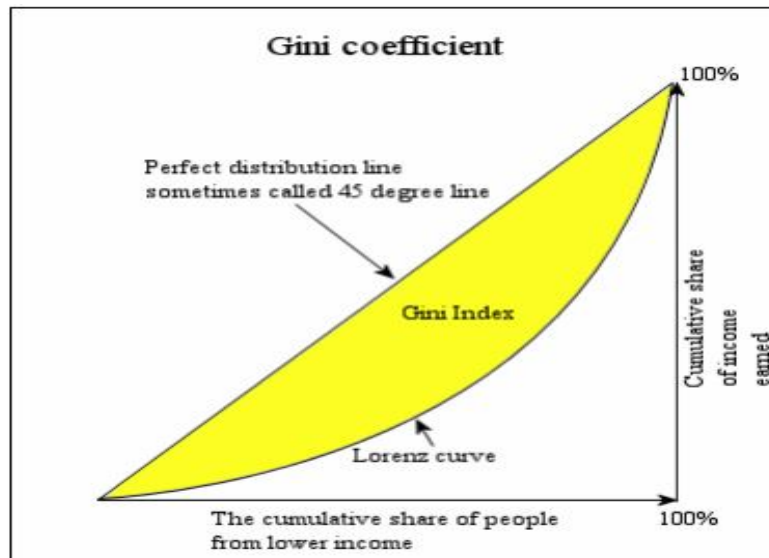
Abstract

There are a lot of debates about income inequality in the literature. Some of scholars and professionals claim that income inequality is one of the drivers of the financial crisis; some of them claim that income inequality is consequence of the financial crisis. This paper attempts to look at the income equality developments in the US before and after the global financial crisis. In this vein, we would like to shed some light on the dynamics behind the headline Gini coefficient, by looking at income inequality at different age groups..

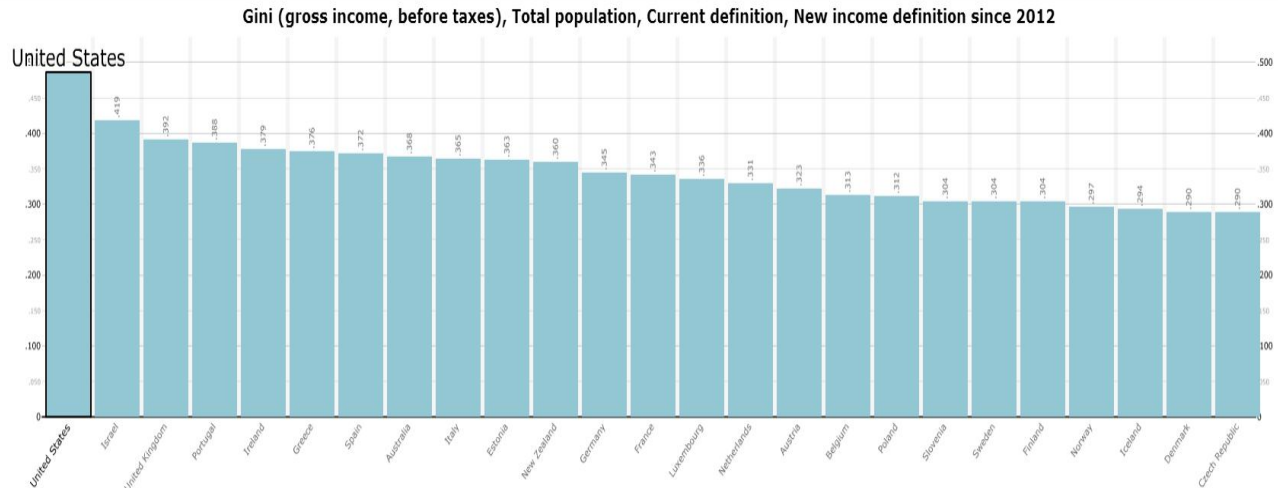
Keywords: income inequality, Gini, income distribution.

Introduction

Global financial crisis, besides weakening growth, also impacted income equality world-wide. This has happened through different channels: Job losses, declined income from mobile and immobile assets etc. Countries put in place various programs and improved the scope and duration of unemployment benefits to eliminate negative effects of crisis on income equality. Gini coefficient is the most widely used indicator to measure income equality. Basically, it does measure inequality of distribution which defined as ratio with values between 1 and 0. (<http://www3.nccu.edu.tw/~jthuang/Gini.pdf>)



Source: <http://www3.nccu.edu.tw/~jthuang/Gini.pdf>



Source: OECD

The graph given above shows some OECD countries’ Gini Coefficient (gross income, before taxes). The United States is the worst country among chosen OECD countries as to Gini Coefficient. Czech Republic, Sweden, Denmark, Finland, Norway are the best countries among chosen OECD countries as to income inequality.

Income Inequality in US

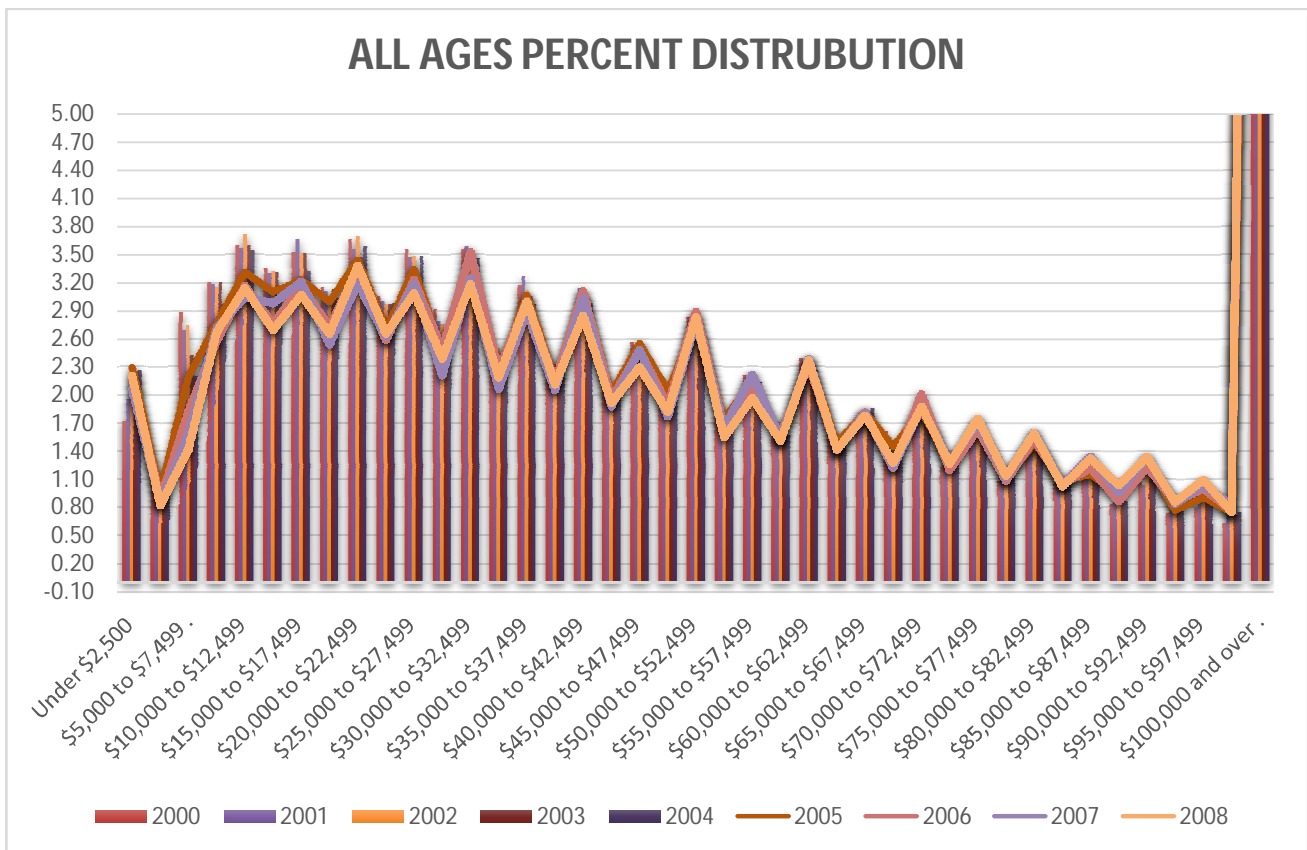
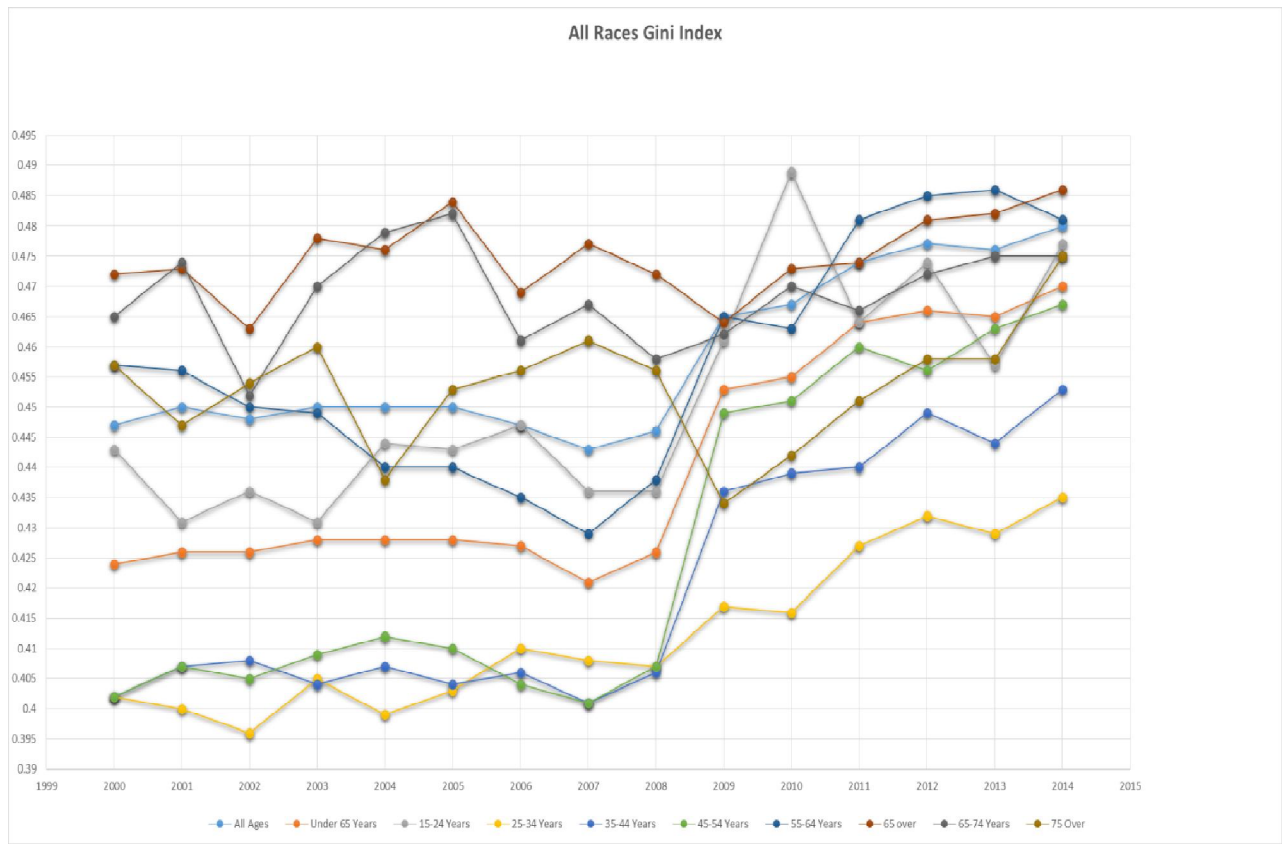
In The United States of America, Gini Coefficients are shown below between 2000 and 2014 by age groups.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
All Ages	0.447	0.45	0.448	0.45	0.45	0.45	0.447	0.443	0.446	0.465	0.467	0.474	0.477	0.476	0.48
Under 65	0.424	0.426	0.426	0.428	0.428	0.428	0.427	0.421	0.426	0.453	0.455	0.464	0.466	0.465	0.47
15-24	0.443	0.431	0.436	0.431	0.444	0.443	0.447	0.436	0.436	0.461	0.489	0.464	0.474	0.457	0.477
25-34	0.402	0.4	0.396	0.405	0.399	0.403	0.41	0.408	0.407	0.417	0.416	0.427	0.432	0.429	0.435
35-44	0.402	0.407	0.41	0.40	0.407	0.404	0.406	0.401	0.406	0.436	0.439	0.44	0.449	0.444	0.453
45-54	0.402	0.407	0.405	0.409	0.412	0.41	0.404	0.401	0.407	0.449	0.451	0.46	0.456	0.463	0.467
55-64	0.457	0.456	0.45	0.449	0.44	0.44	0.435	0.429	0.438	0.465	0.463	0.481	0.485	0.486	0.481
65 over	0.472	0.473	0.463	0.478	0.476	0.484	0.469	0.477	0.472	0.464	0.473	0.474	0.481	0.482	0.486
65-74	0.465	0.474	0.452	0.47	0.479	0.482	0.461	0.467	0.458	0.462	0.47	0.466	0.472	0.475	0.475
75 over	0.457	0.447	0.454	0.46	0.438	0.453	0.456	0.461	0.456	0.434	0.442	0.451	0.458	0.458	0.475

Table 1: Gini Coefficient between 2000 and 2014

The table given above shows that income equality in the US was more or less stable before the crisis. It deteriorated sharply in 2009 and continued to worsen steadily afterwards. Almost all age groups followed the same pattern but the deterioration has been stronger in the age groups such as 35-44 years, 45 -54 years. On the other hand the pattern was the opposite for some age groups such as 65 -74 years and 75 over which literally observed an improvement in 2009, and have shown relatively stable picture during the whole period. The following graph shows the differentiation of income inequality among different age groups more visually.

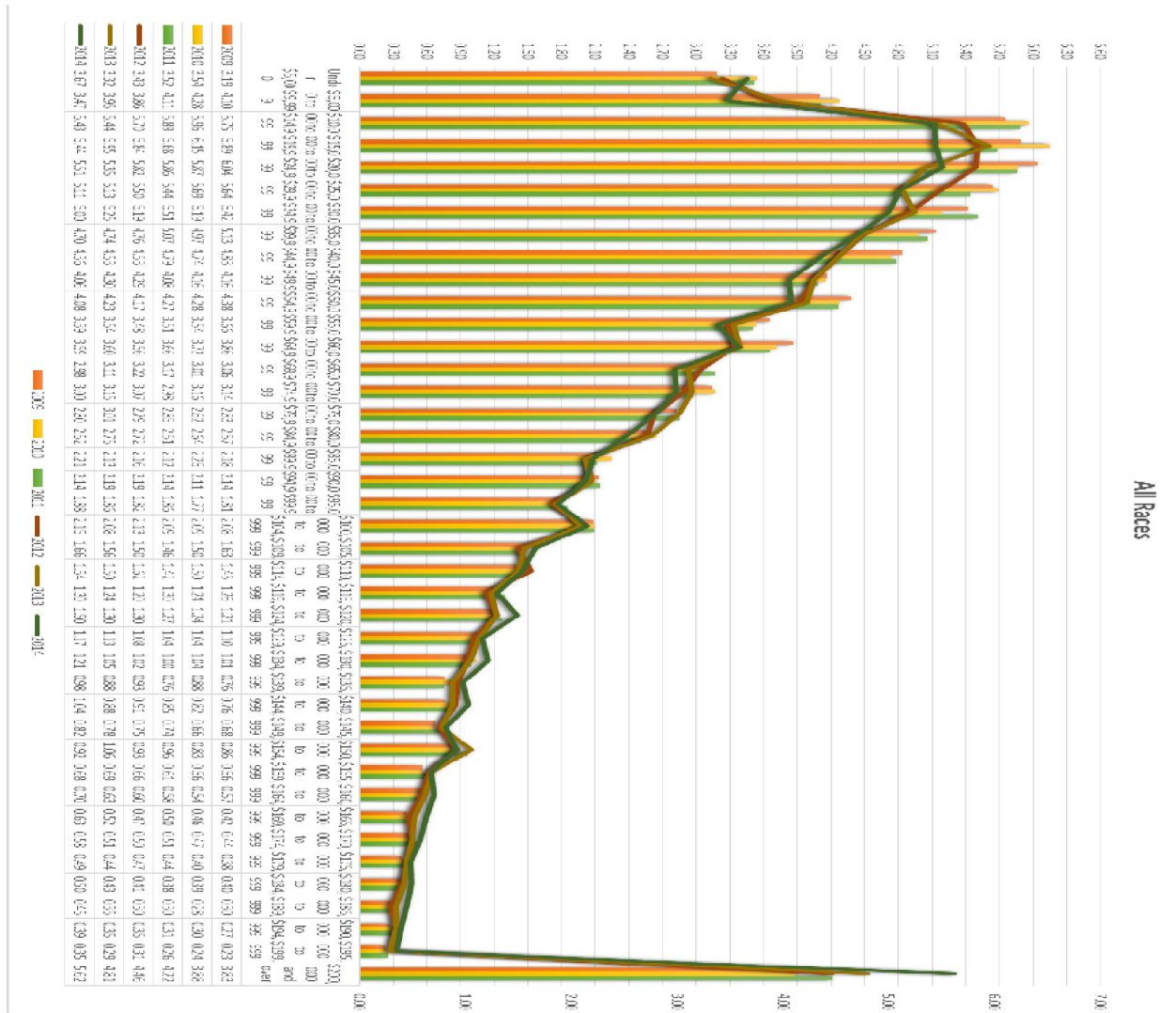
To find out the reason of these, income distribution should be examined. In the following data shows percentage according to ranges.



Source: The U.S Census Bureau

Percentage of distribution between 2009 and 2014 are shown below.

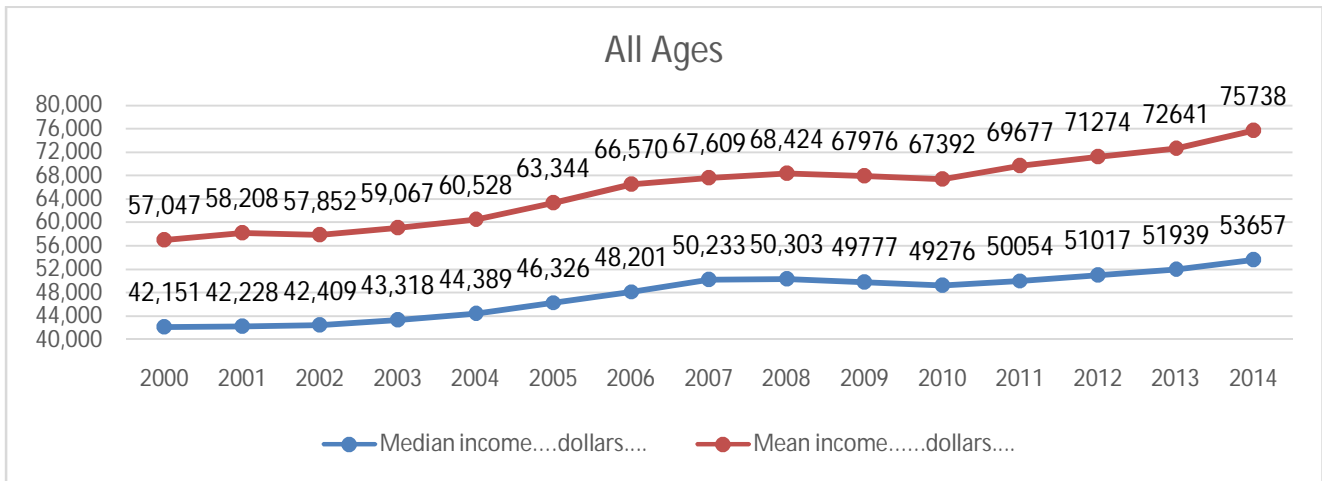
After 2009, Selected Characteristics of Households by Total Money Income has been published by The U.S Census Bureau using \$5000 income intervals. Then, while between 2000 and 2008 has been shown using \$2500 interval, between 2009 and 2014 have been shown \$5000 income intervals. After 2008 financial crisis, under \$5000 household number has risen steadily.



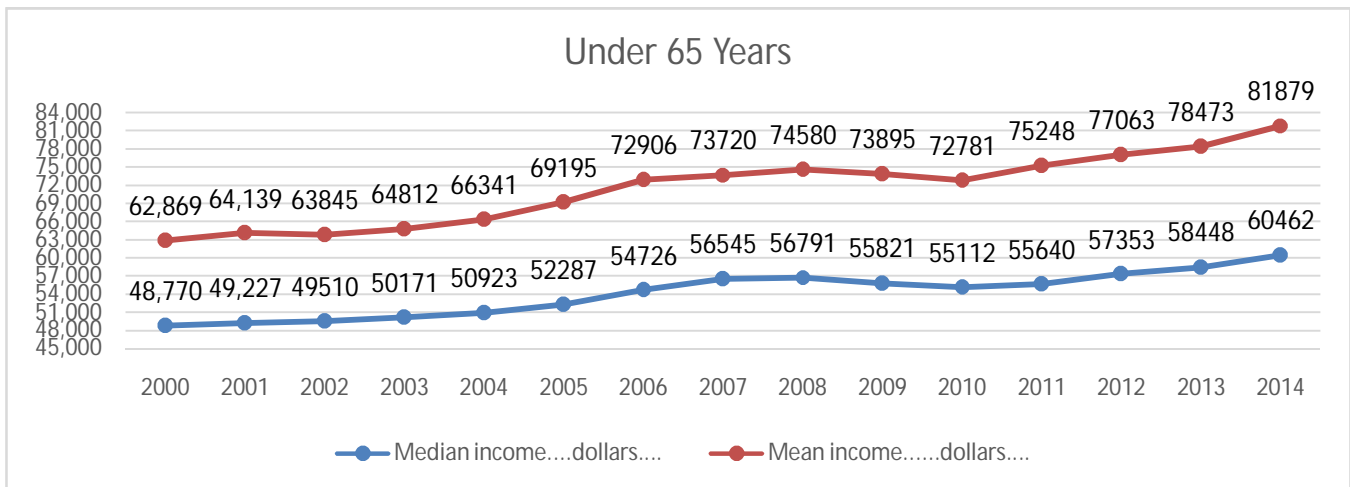
Source: TheU.S Census Bureau

Median and Mean Income in US

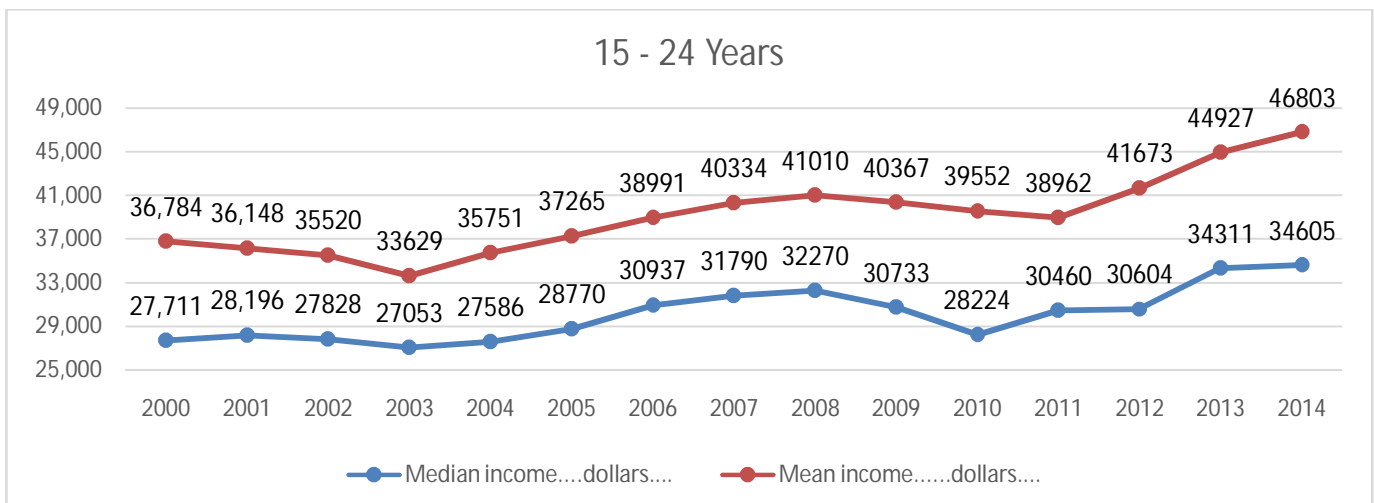
Median income and mean income are shown below. Between 2008 and 2009, there was a slight fall in median and mean income. However, Gini Coefficient increased in 2009. The crisis had effect on this change. Although median and mean incomes have been increasing since the mortgage crisis, income distribution has continued to deteriorate. While the household median income in US was \$42,151 in 2000, the household mean income in US was \$57,047. It means that mean income was over 35.3 percent of the median income. In 2008, mean income was over 36 percent of median income. In 2009, the one of the most affected years by financial crisis, mean income was over 36.5 percent median income. In 2014, this ratio was 39.7 percent.



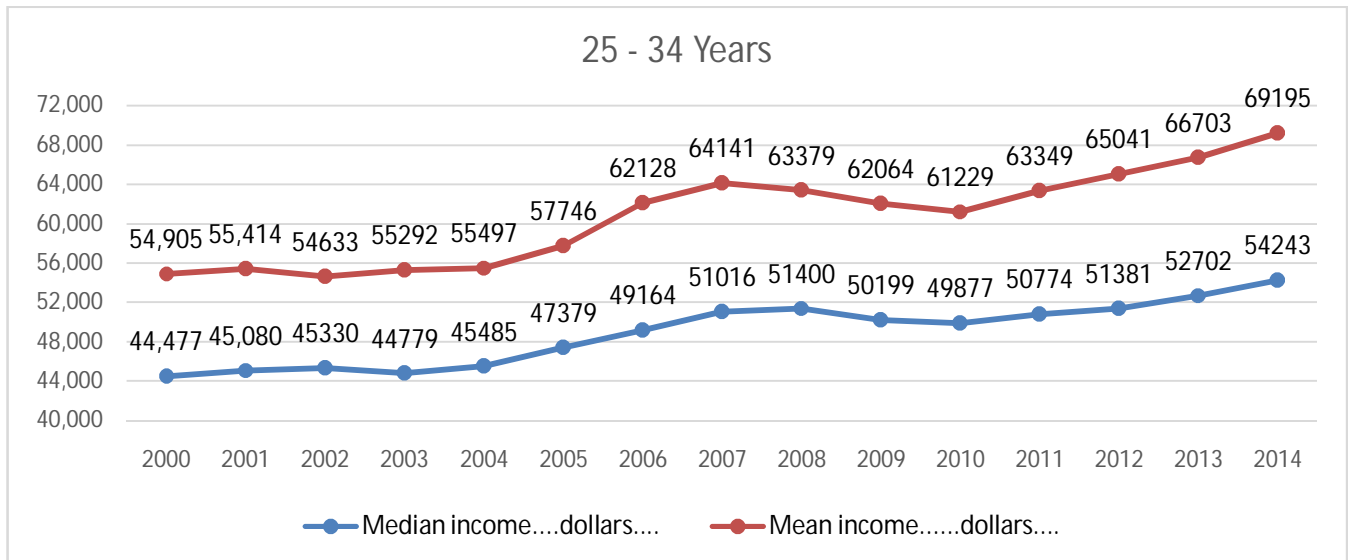
While the household median income under 65 years in US was \$48,770 in 2000, the household mean income in US was \$62,869. It means that mean income was over 28.9 percent of the median income. In 2008, mean income was over 31.3 percent of median income. In 2009, mean income was over 32.3 percent of median income. In 2014, this ratio was 34.3 percent.



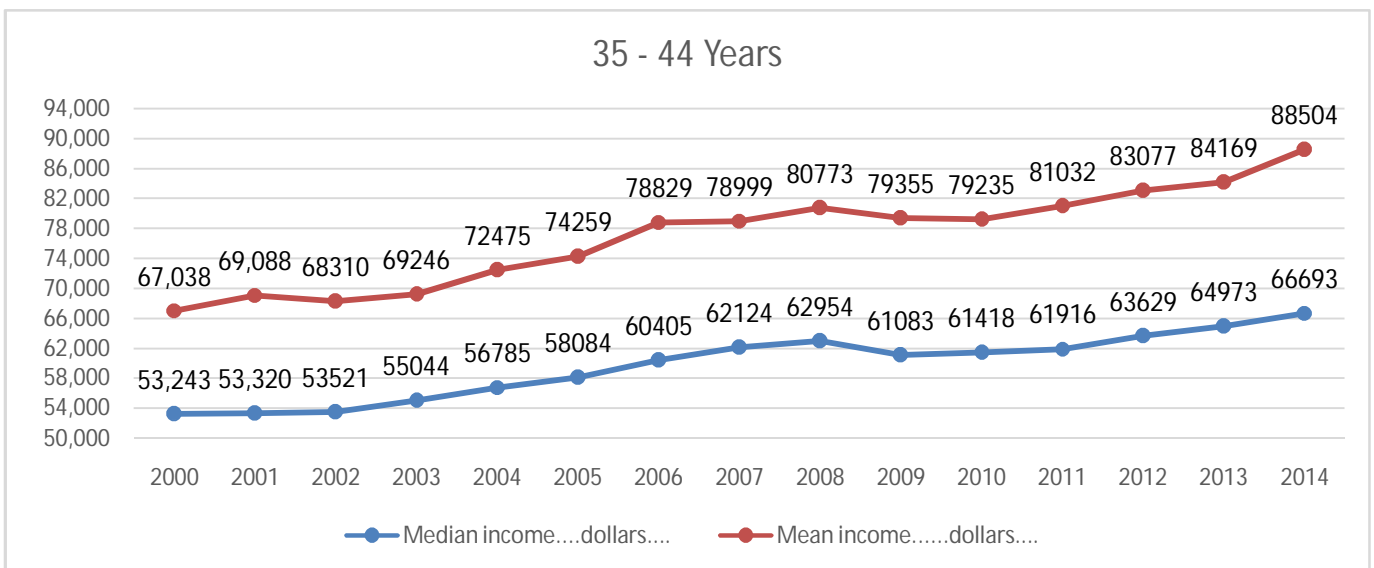
While the household median income 15 to 24 years in US was \$27,711 in 2000, the household mean income in US was \$36,784. It means that mean income was over 32.7 percent of the median income. In 2008, mean income was over 27 percent of median income. In 2009, mean income was over 31.3 percent of median income. In 2014, this ratio was 36.1 percent.



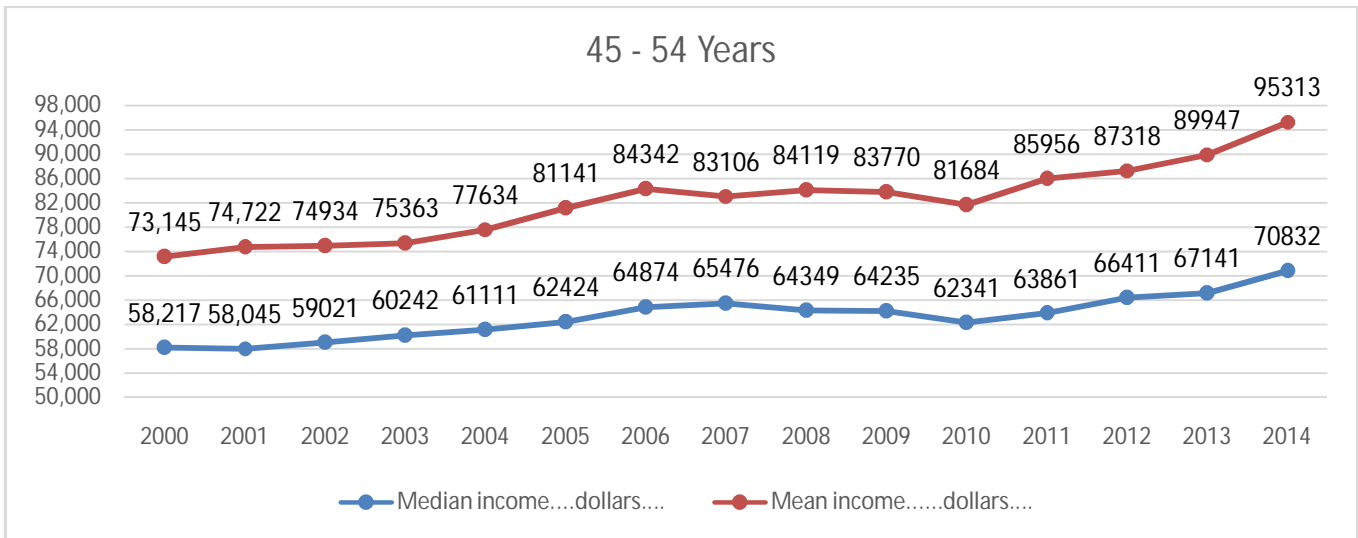
While the household median income 25 to 34 years in US was \$44,477 in 2000, the household mean income in US was \$54,905. It means that mean income was over 23.4 percent of the median income. In 2008, mean income was over 23.3 percent of median income. In 2009, mean income was over 23.6 percent of median income. In 2014, this ratio was 26.5 percent.



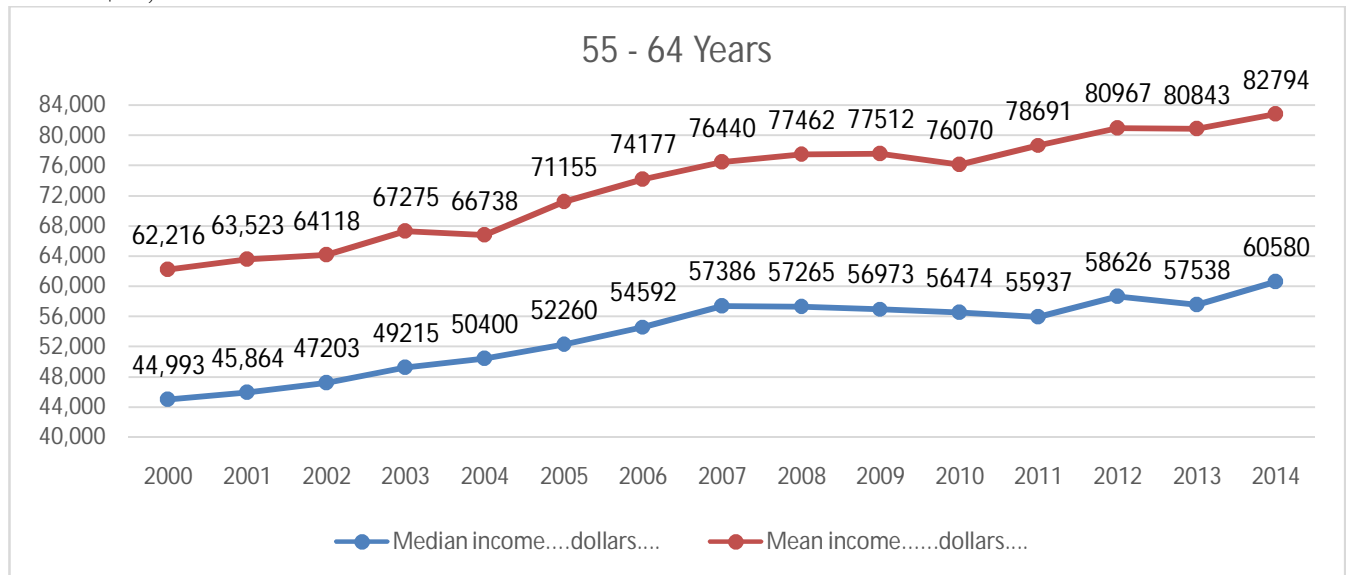
While the household median income 35 to 44 years in US was \$53,243 in 2000, the household mean income in US was \$67,038. It means that mean income was over 25.9 percent of the median income. In 2008, mean income was over 28.3 percent of median income. In 2009, mean income was over 29.9 percent of median income. In 2014, this ratio was 30.5 percent.



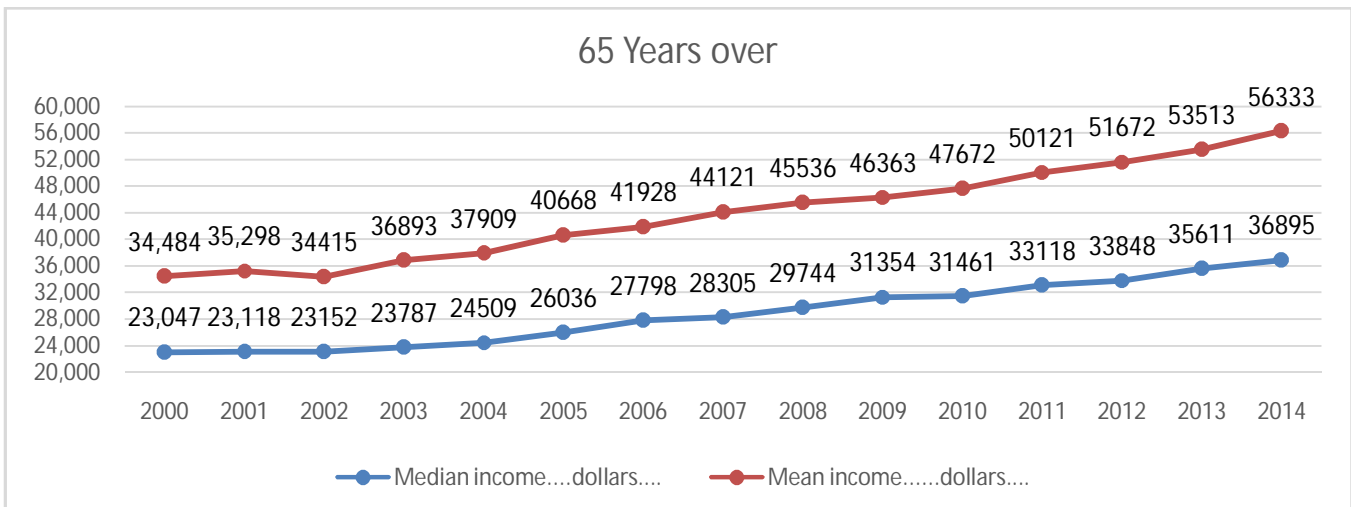
45 to 54 age interval is the one of the most derogation intervals. In this age interval, mean income was greater than \$14,928\$ median income. Therefore, mean income was over 1.25 times of median income. However, this ratio decreased to 1.30 in 2009. Even though this decrease, Gini Coefficient rose. Therefore, this shows us income was distributed unequally in 45 to 54 years interval.



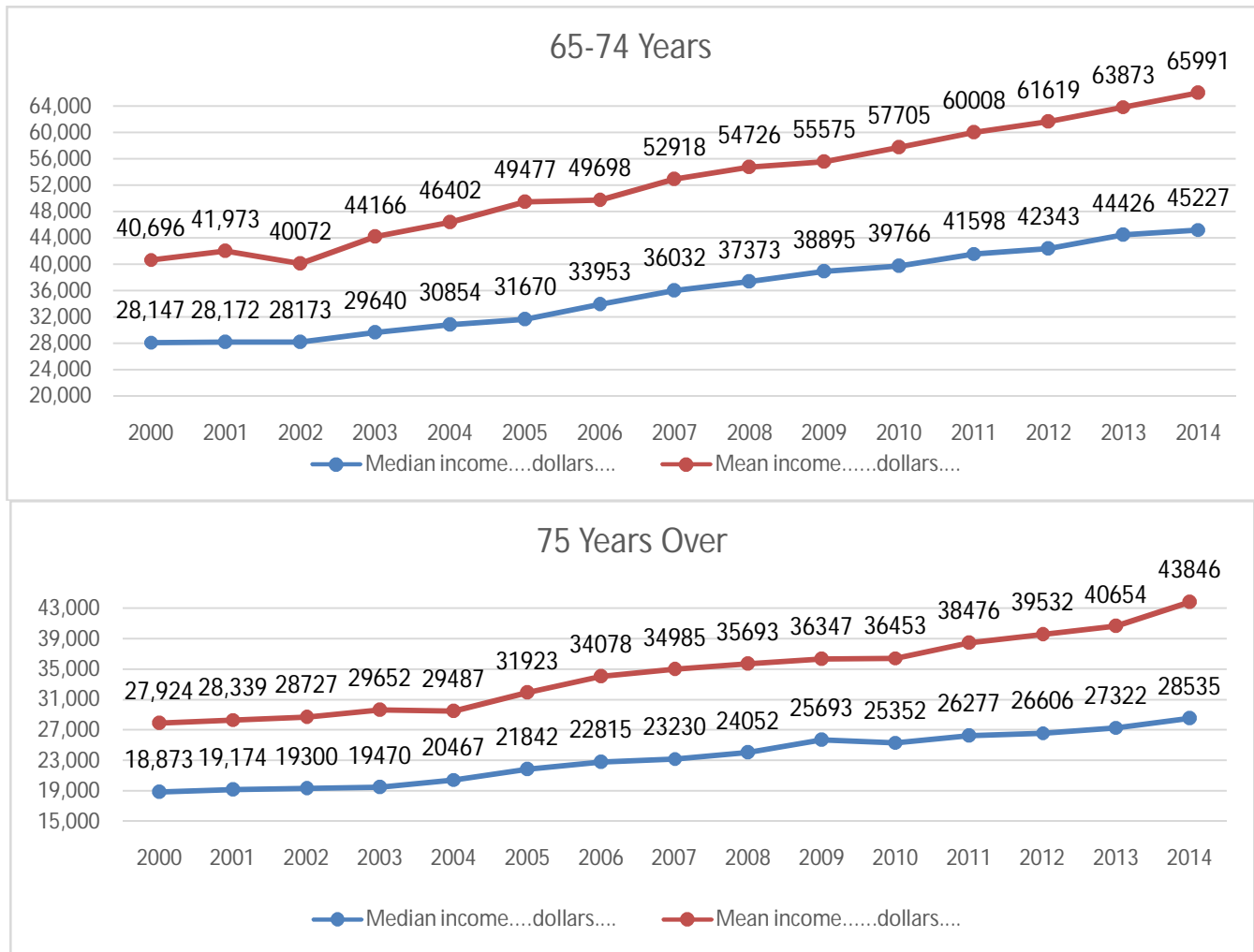
While the household median income 55 to 64 years in US was \$44,993 in 2000, the household mean income in US was \$62,216.



Although the crisis, median income and mean income of the age 65 years and over almost increased constantly.



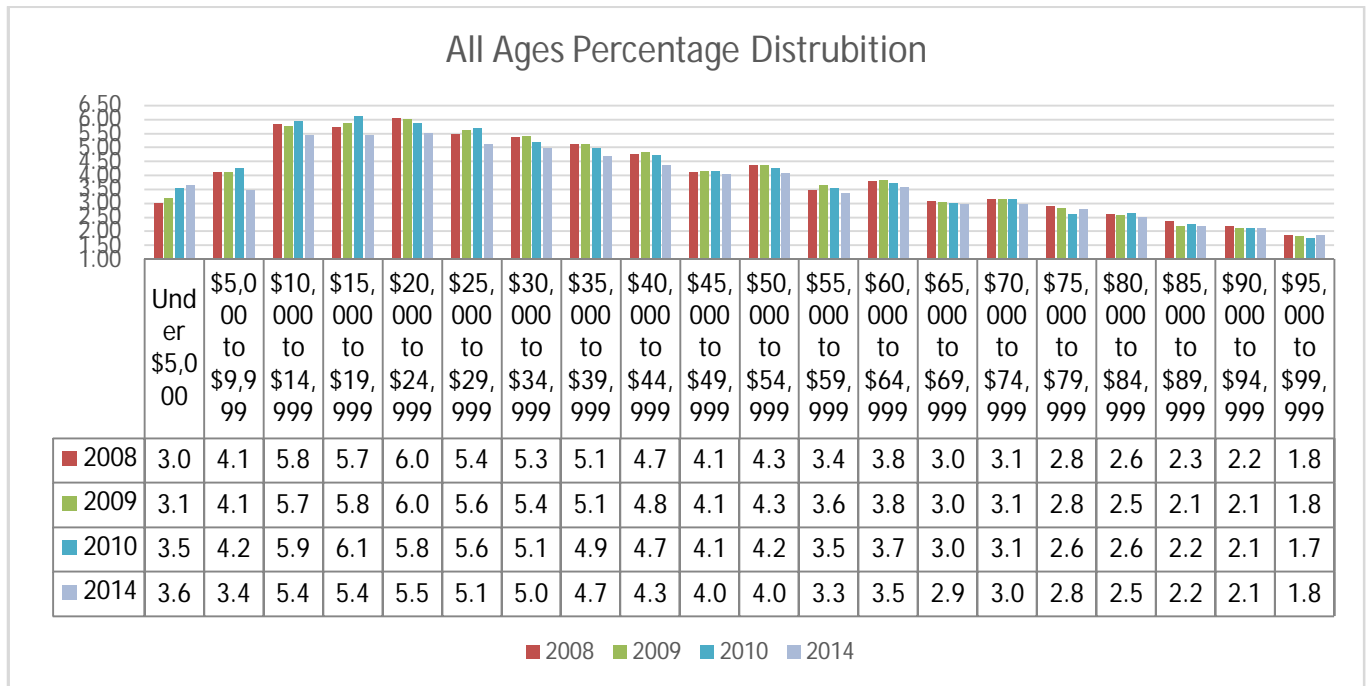
In addition to 65 years over, the median and mean income of 65 to 74 years and 75 years over increased.



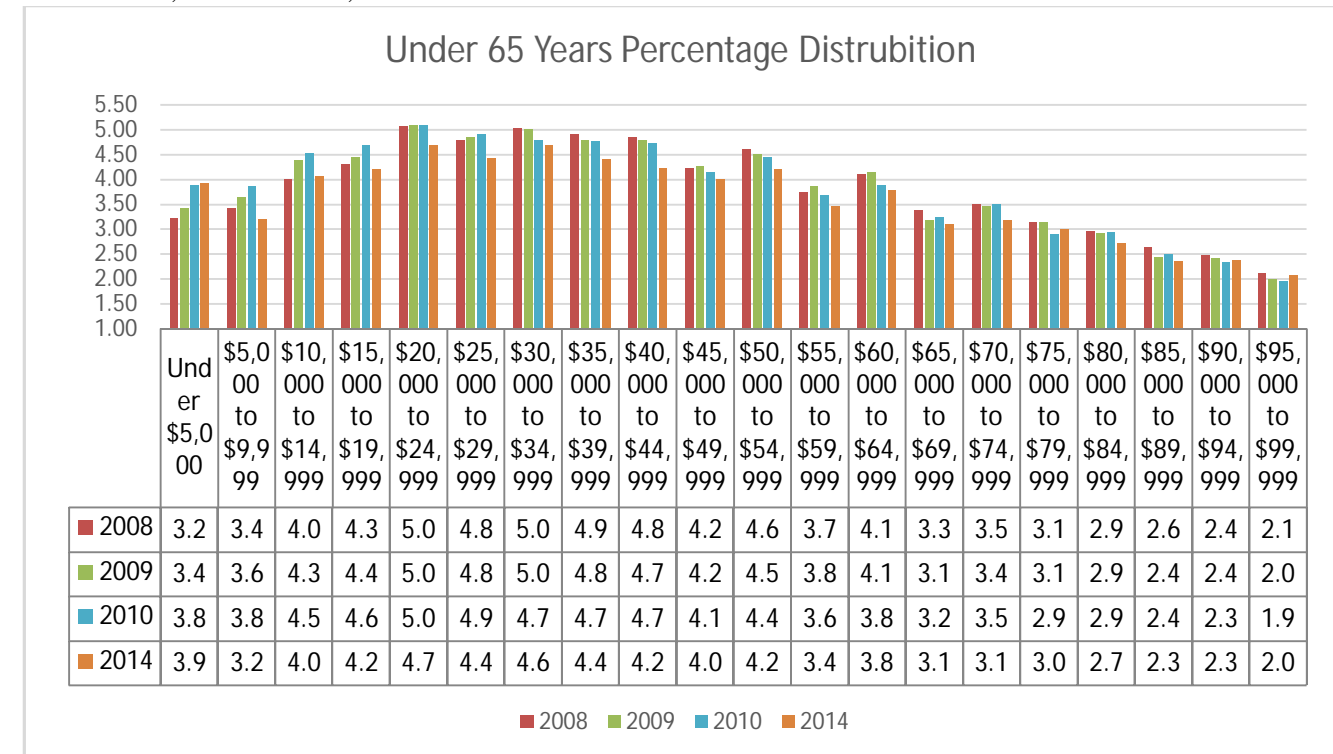
Source: The U.S Census Bureau

Percentage Distribution Change

The graphs shown below tell us how percentage distribution changes 2008, 2009, 2010 and 2014. In 2008, share of household under \$20,000 income was 18.72, in 2009 18.93, in 2010 19.93 and in 2014 18.01. Also, in 2008, share of household \$20,000\$ to \$39,999 income was 22.04, in 2009 22.23, in 2010 21.72, in 2014 20.32.

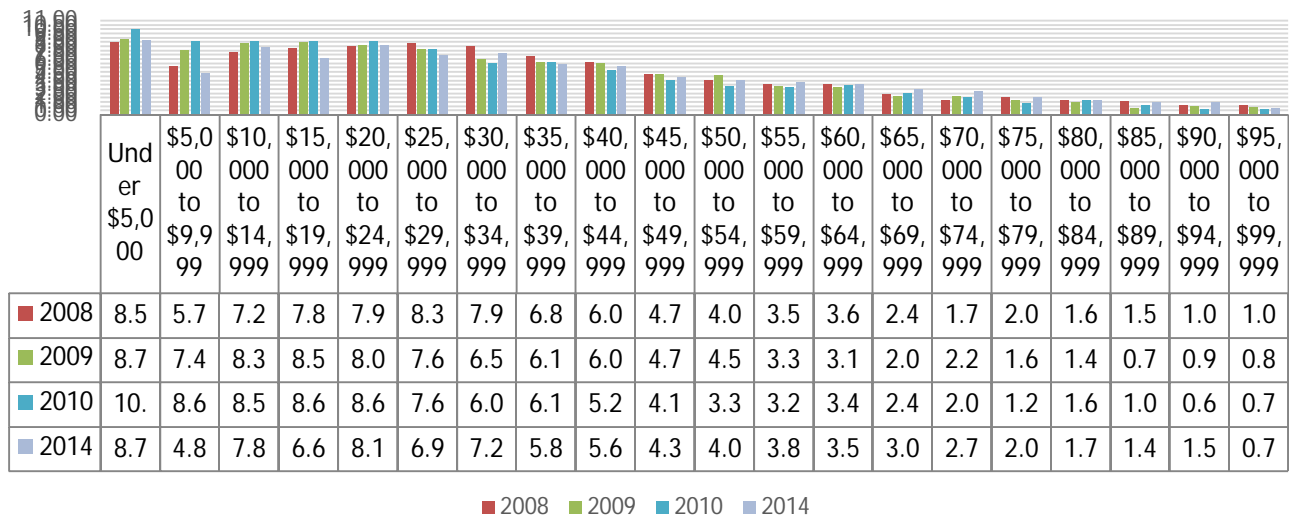


In 2008, share of household under 65 years and under \$20,000 income was 14.98, in 2009 15.91, in 2010 16.99 and in 2014 15.40. Also, in 2008, share of household under 65 years and \$20,000\$ to \$39,999 income was 19.81, in 2009 19.77, in 2010 19.58, in 2014 18.22.



In 2008, share of household 15 to 24 years and under \$20,000 income was 29.34, in 2009 33.10, in 2010 35.90 and in 2014 28.13. Also, in 2008, share of household 15 to 24 years and \$20,000\$ to \$39,999 income was 31.04, in 2009 28.41, in 2010 28.50, in 2014 28.21.

15 - 24 Years Percentage Distribution

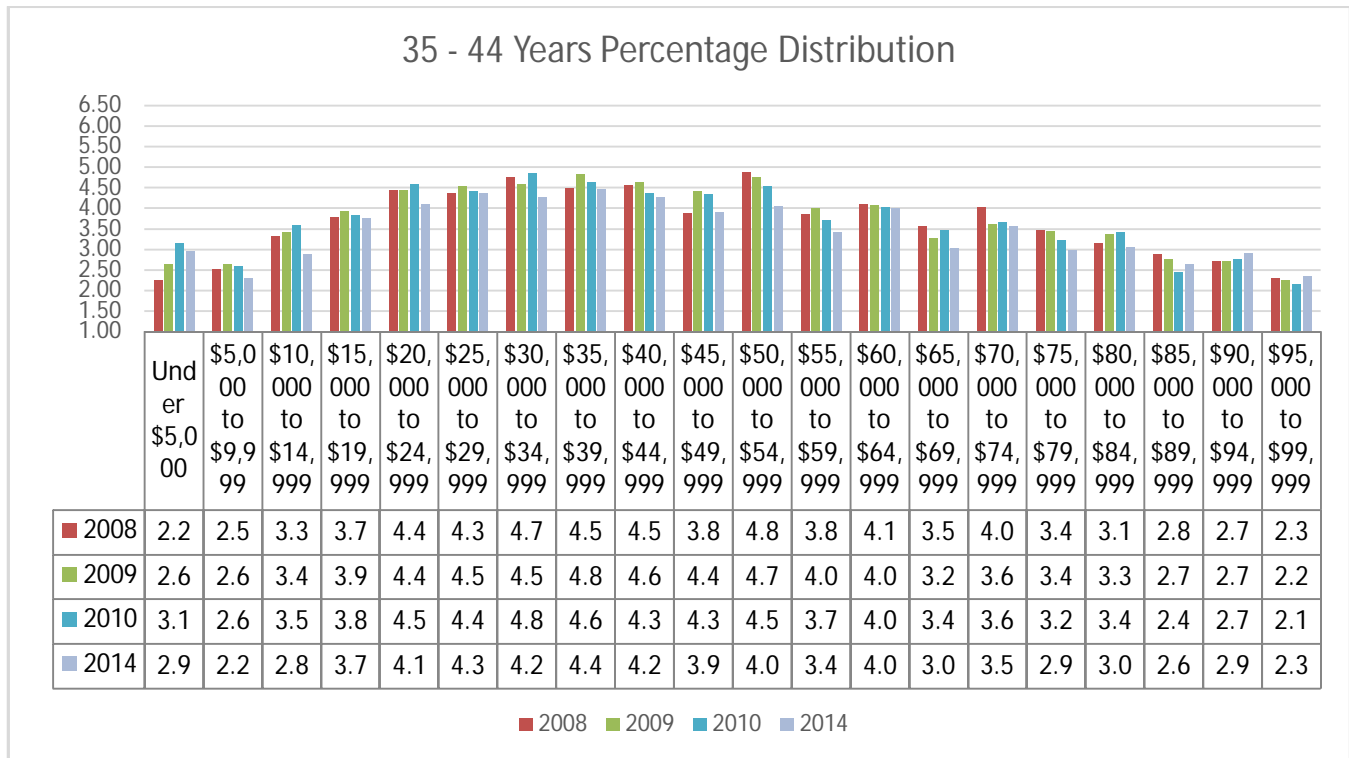


In 2008, share of household 25 to 34 years and under \$20,000 income was 15.42, in 2009 16.08, in 2010 16.90 and in 2014 15.05. Also, in 2008, share of household 25 to 34 years and \$20,000\$ to \$39,999 income was 22.60, in 2009 23.23, in 2010 22.62, in 2014 20.71.

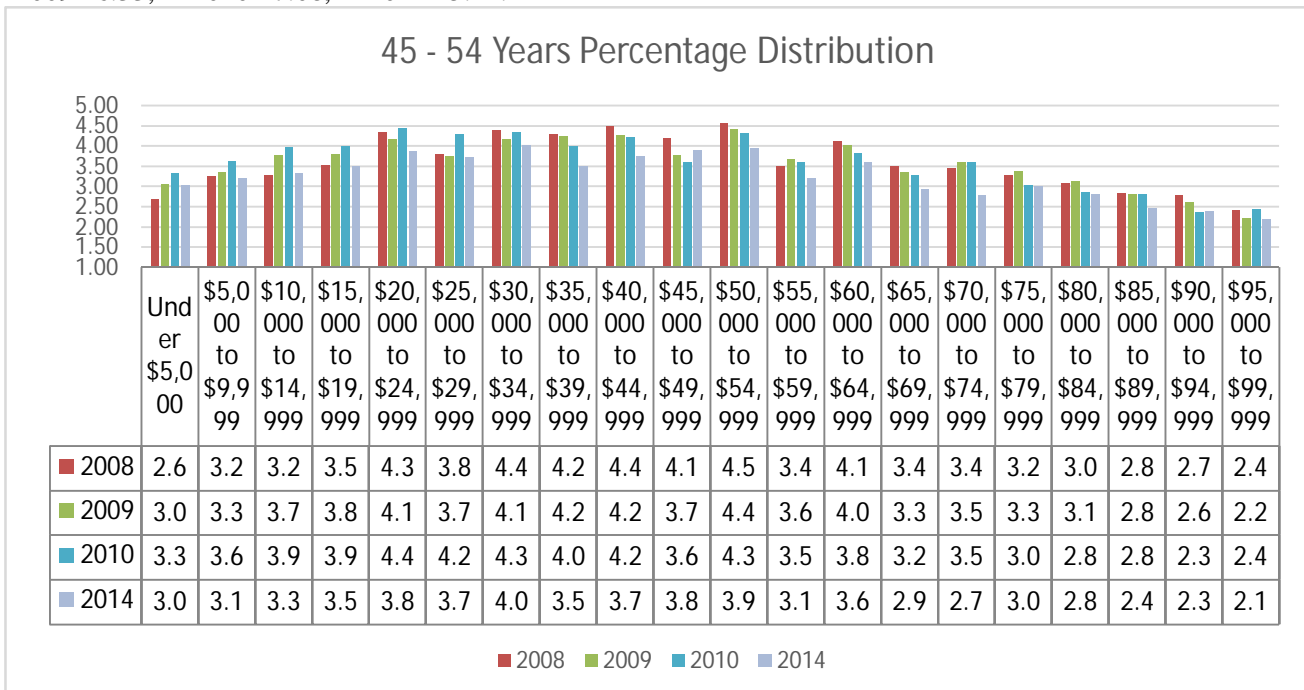
25 - 34 Years Percentage Distribution



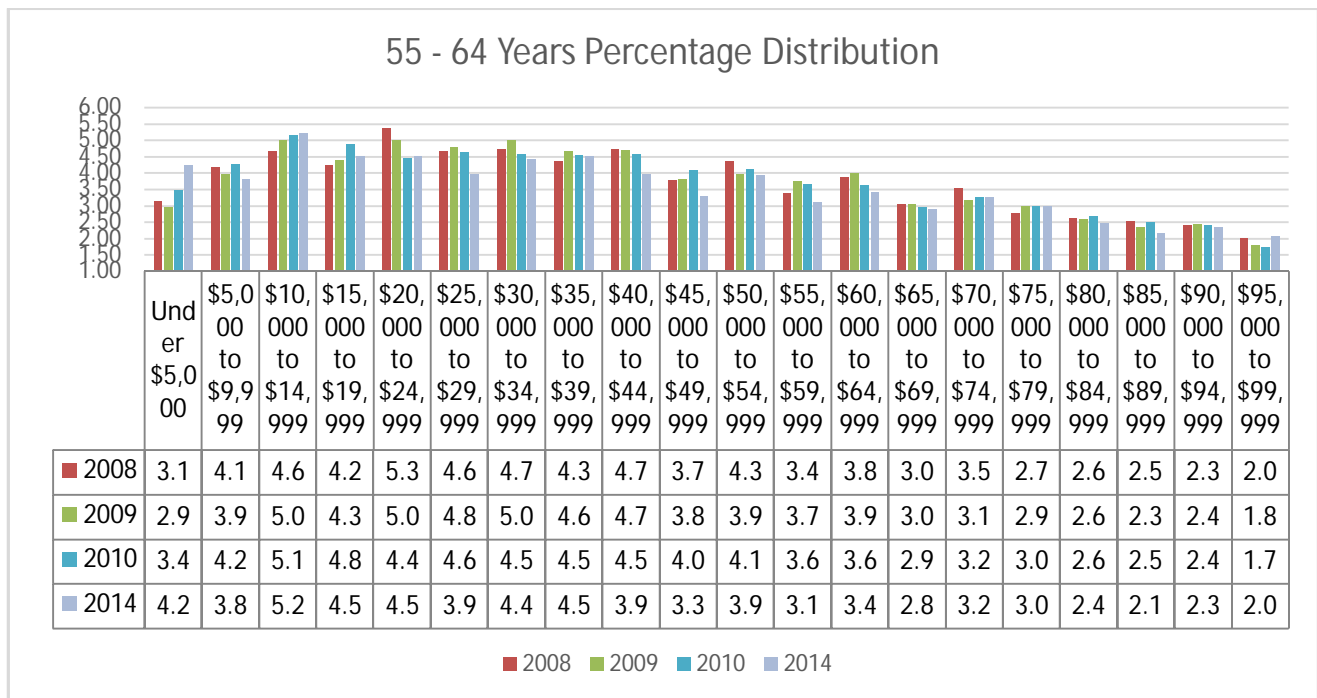
In 2008, share of household 35 to 44 years and under \$20,000 income was 11.87, in 2009 12.61, in 2010 13.15 and in 2014 11.87. Also, in 2008, share of household 35 to 44 years and \$20,000\$ to \$39,999 income was 18.07, in 2009 18.40, in 2010 18.50, in 2014 17.18.



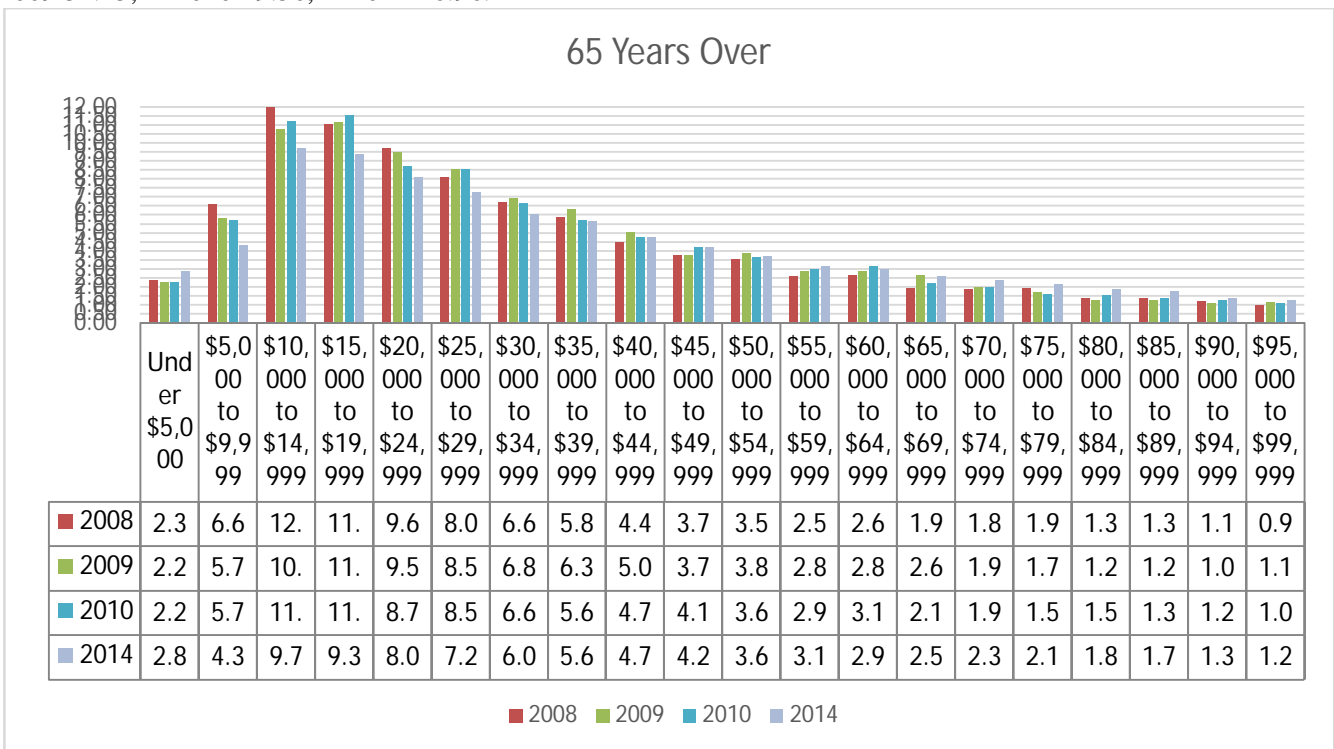
In 2008, share of household 45 to 54 years and under \$20,000 income was 12.72, in 2009 13.98, in 2010 14.88 and in 2014 13.05. Also, in 2008, share of household 45 to 54 years and \$20,000\$ to \$39,999 income was 16.82, in 2009 16.33, in 2010 17.08, in 2014 15.11.



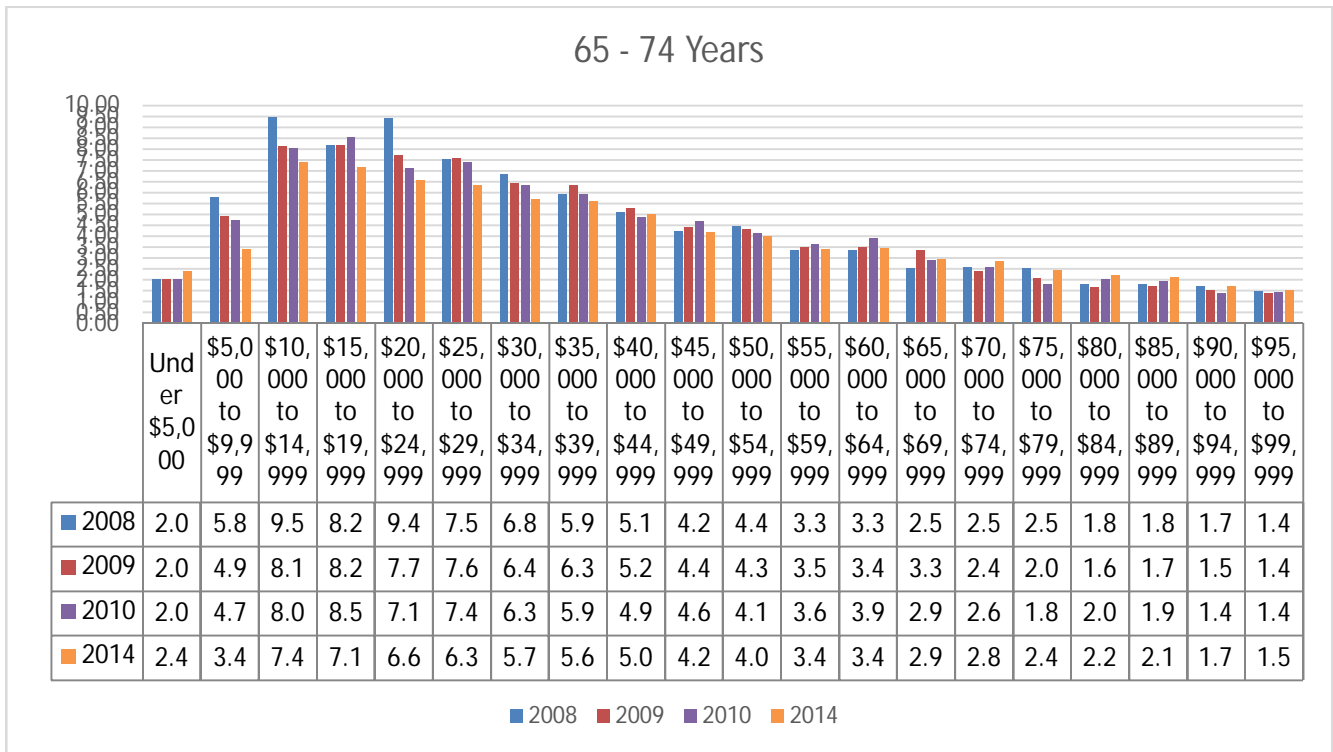
In 2008, share of household 55 to 64 years and under \$20,000 income was 16.21, in 2009 16.33, in 2010 17.81 and in 2014 17.78. Also, in 2008, share of household 55 to 64 years and \$20,000\$ to \$39,999 income was 19.14, in 2009 19.49, in 2010 18.23, in 2014 17.44.



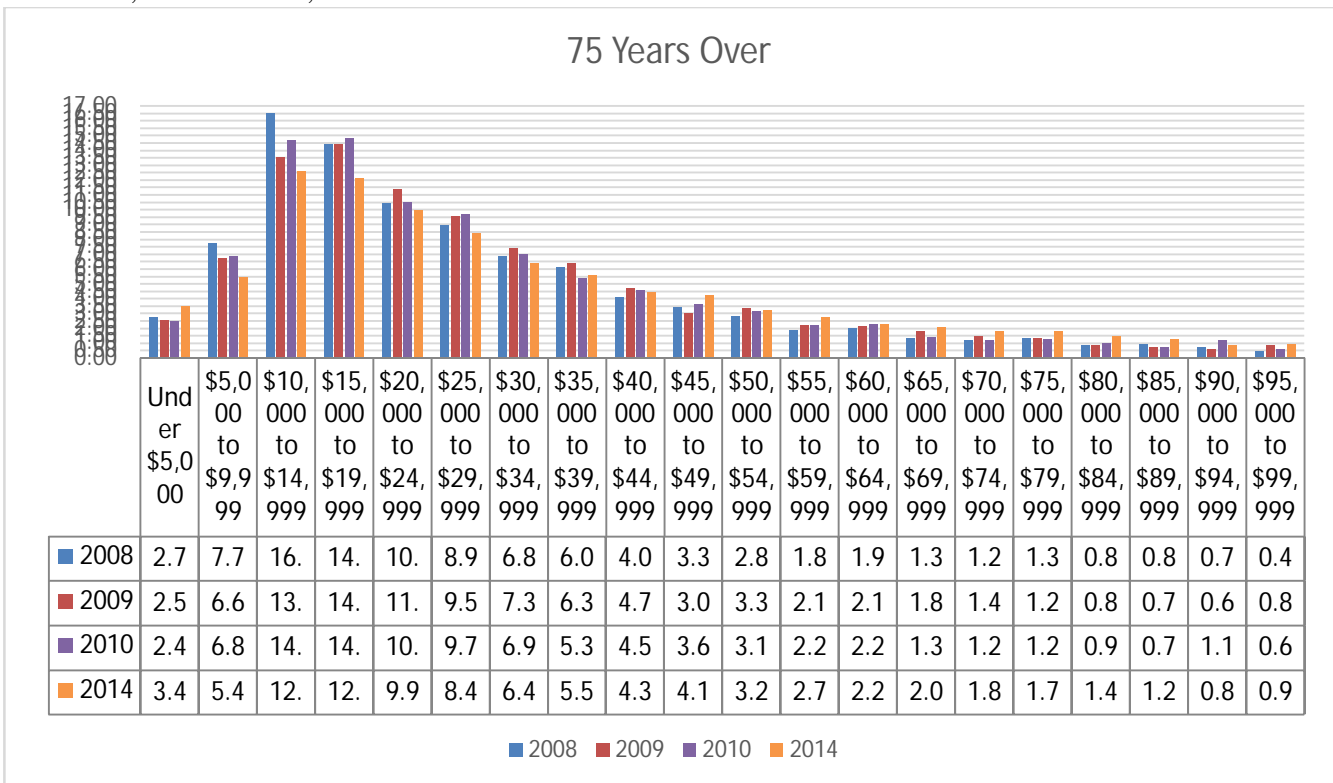
In 2008, share of household 65 years over and under \$20,000 income was 32.65, in 2009 29.96, in 2010 30.67 and in 2014 26.25. Also, in 2008, share of household 65 years over and \$20,000\$ to \$39,999 income was 30.30, in 2009 31.25, in 2010 29.56, in 2014 26.96.



In 2008, share of household 65 to 74 years and under \$20,000 income was 25.59, in 2009 23.31, in 2010 23.40 and in 2014 20.45. Also, in 2008, share of household 65 to 74 years and \$20,000\$ to \$39,999 income was 29.73, in 2009 28.11, in 2010 26.87, in 2014 24.35.



In 2008, share of household 75 years over and under \$20,000 income was 41.41, in 2009 37.19, in 2010 38.79 and in 2014 33.73. Also, in 2008, share of household 75 years over and \$20,000\$ to \$39,999 income was 32.27, in 2009 34.65, in 2010 32.56, in 2014 30.33.

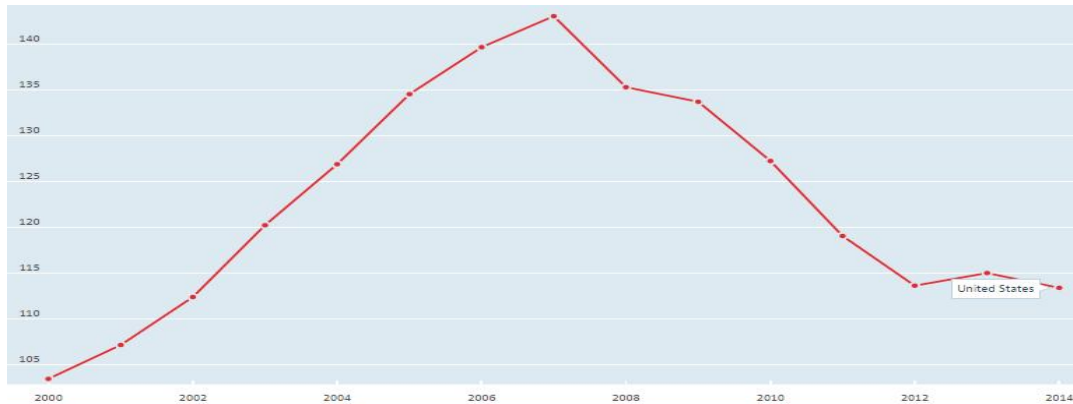


Source: The U.S Census Bureau

The Possible Reasons of the Deterioration of Income Inequality

What could cause to Gini coefficient to be increased? Let's look at the some indicators. The first indicator is total household debt which is shown below. After 2008, crisis household debt declined. Therefore, household debt might not be the cause of the deterioration of income inequality.

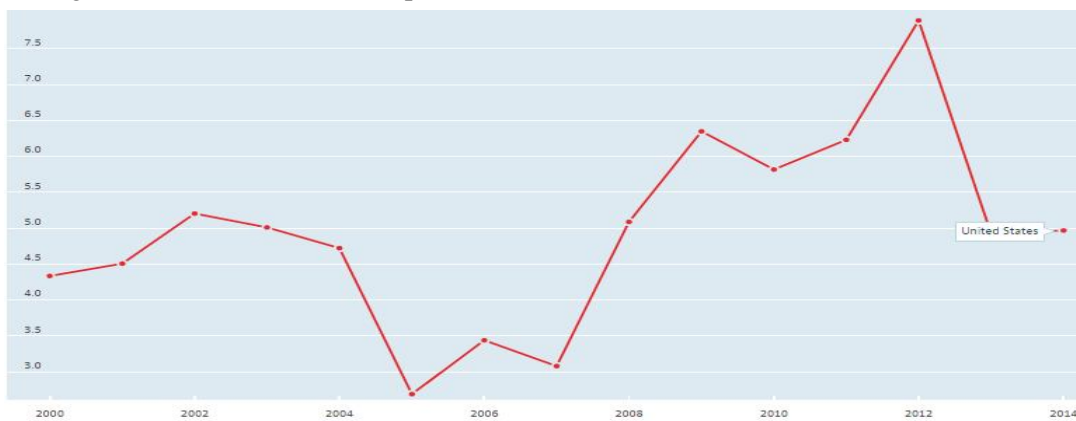
Household debt Total, % of net disposable income, 2000 – 2014



Source: OECD

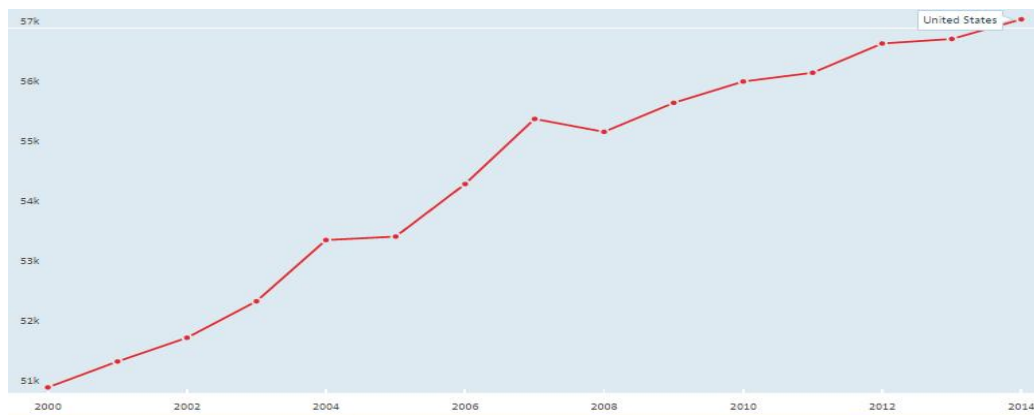
In the same way with household debt, household saving got better. Therefore, household saving may not be our reason. In addition, average wages went better.

Household savings Total, % of household disposable income, 2000 – 2014



Source: OECD

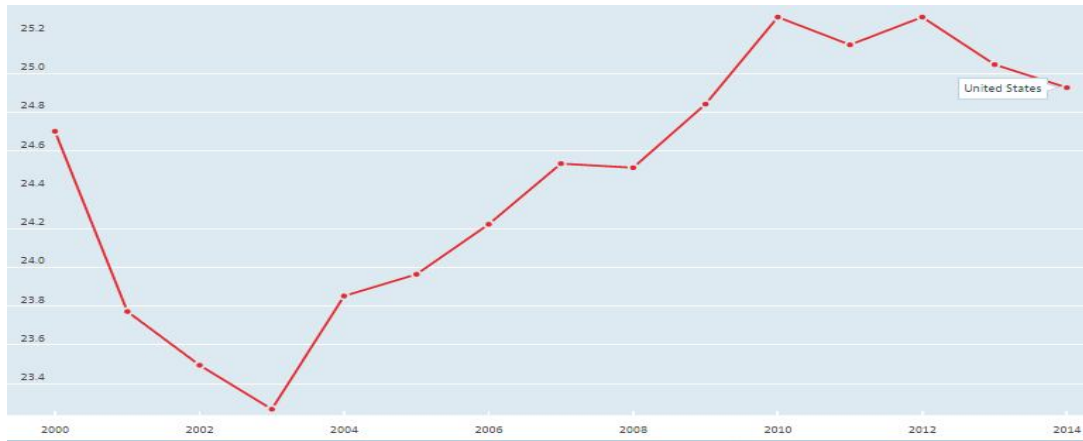
Average wages Total, US dollars, 2000 – 2014



Source: OECD

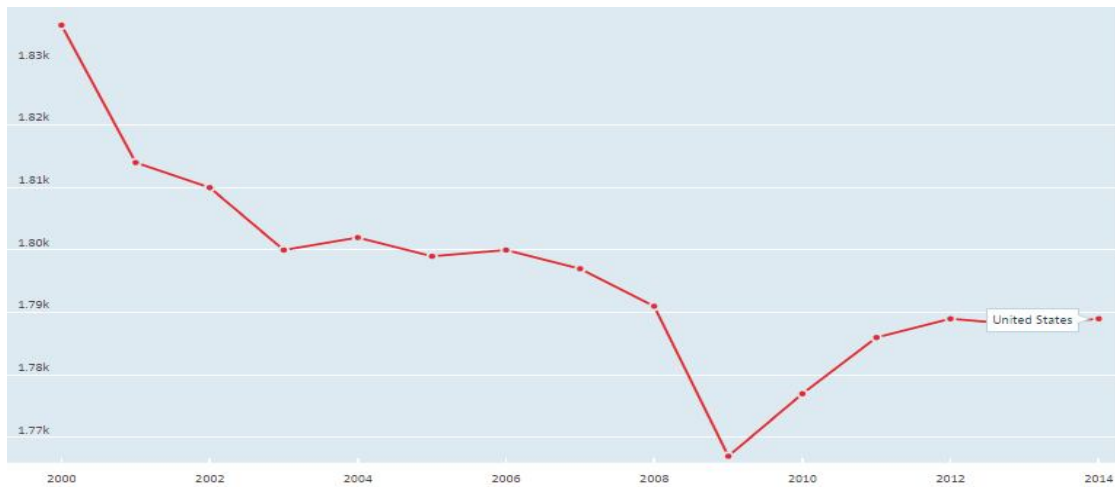
The deterioration of income distribution might be caused by some of reasons which are shown in the following graphs.

Wage levels Low pay, Percentage, 2000 – 2014



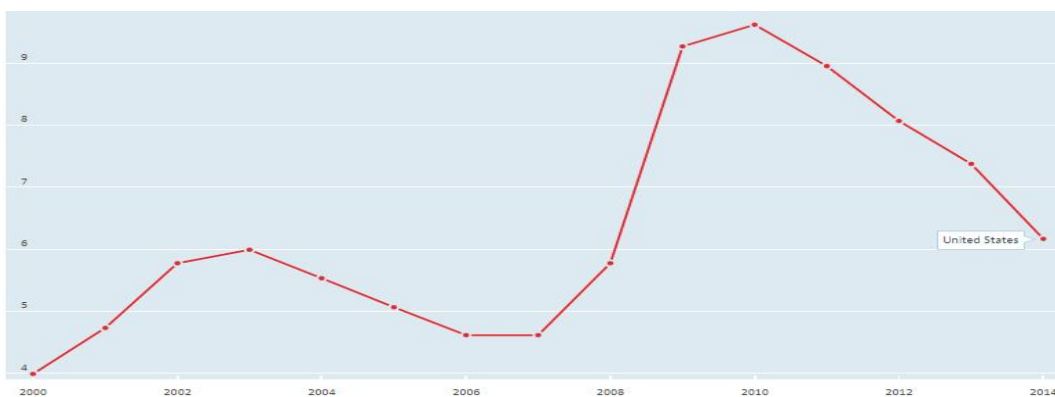
Source: OECD

Hours worked Total, Hours/worker, 2000 – 2014



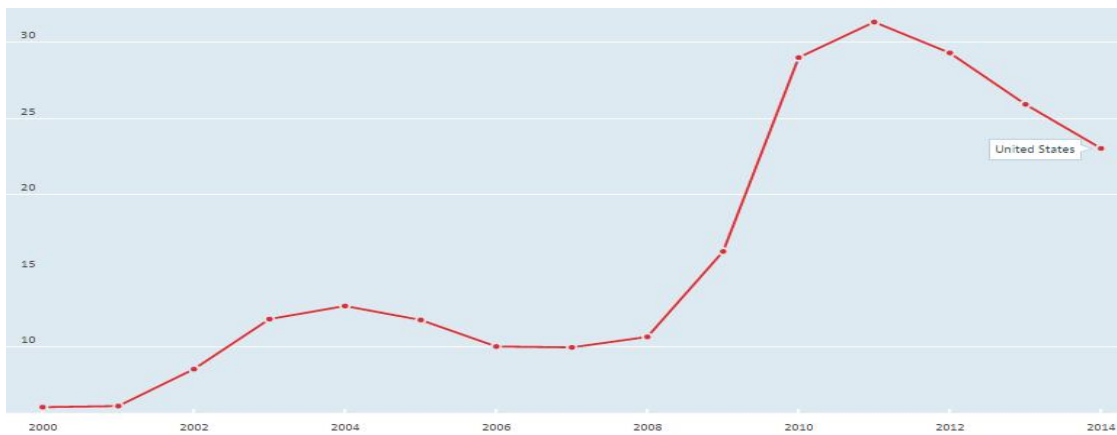
Source: OECD

Unemployment rate Total, % of Labor force, 2000 – 2014



Source: OECD

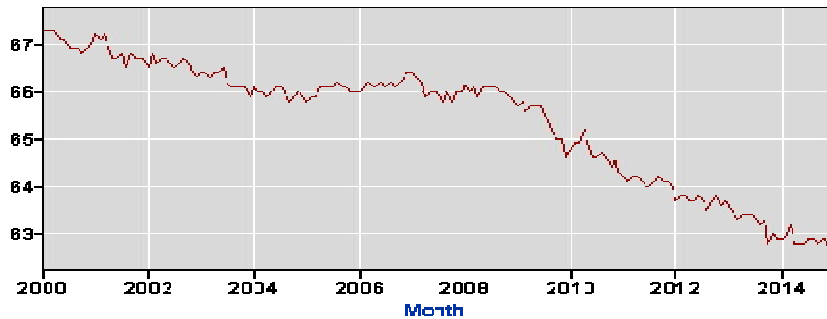
Long-term unemployment rate total, % of unemployed, 2000 – 2014



Source: OECD

One of these reasons is also Civilian labor force participation rate. Between 2000 and 2008 there are a slight fall, but after 2008 there are falls significantly.

Seasonally Adjusted
Series title: (Seas) Labor Force Participation Rate
Labor force status: Civilian labor force participation rate
Type of data: Percent or rate
Age: 16 years and over

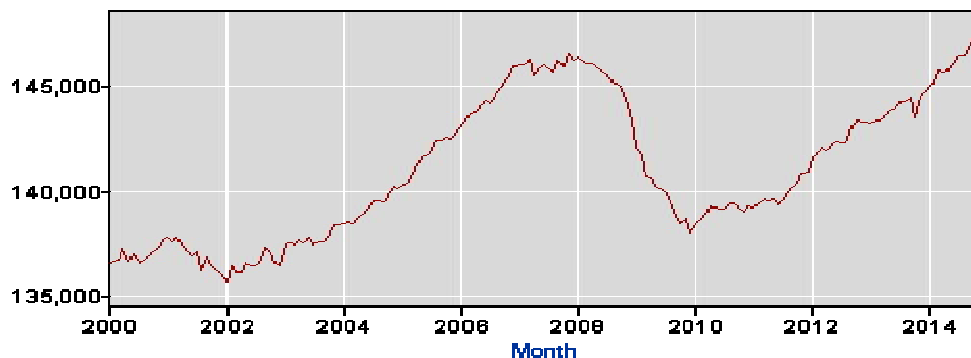


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2000	67.3	67.3	67.3	67.3	67.1	67.1	66.9	66.9	66.9	66.8	66.9	67.0
2001	67.2	67.1	67.2	66.9	66.7	66.7	66.8	66.5	66.8	66.7	66.7	66.7
2002	66.5	66.8	66.6	66.7	66.7	66.6	66.5	66.6	66.7	66.6	66.4	66.3
2003	66.4	66.4	66.3	66.4	66.4	66.5	66.2	66.1	66.1	66.1	66.1	65.9
2004	66.1	66.0	66.0	65.9	66.0	66.1	66.1	66.0	65.8	65.9	66.0	65.9
2005	65.8	65.9	65.9	66.1	66.1	66.1	66.1	66.2	66.1	66.1	66.0	66.0
2006	66.0	66.1	66.2	66.1	66.1	66.2	66.1	66.2	66.1	66.2	66.3	66.4
2007	66.4	66.3	66.2	65.9	66.0	66.0	66.0	65.8	66.0	65.8	66.0	66.0
2008	66.2	66.0	66.1	65.9	66.1	66.1	66.1	66.1	66.0	66.0	65.9	65.8
2009	65.7	65.8	65.6	65.7	65.7	65.7	65.5	65.4	65.1	65.0	65.0	64.6
2010	64.8	64.9	64.9	65.2	64.9	64.6	64.6	64.7	64.6	64.4	64.6	64.3
2011	64.2	64.1	64.2	64.2	64.1	64.0	64.0	64.1	64.2	64.1	64.1	64.0
2012	63.7	63.8	63.8	63.7	63.7	63.8	63.7	63.5	63.7	63.8	63.6	63.7
2013	63.6	63.4	63.3	63.4	63.4	63.4	63.3	63.2	63.3	62.8	63.0	62.9
2014	62.9	63.0	63.2	62.8	62.8	62.8	62.9	62.9	62.8	62.9	62.9	62.7

Source: The Bureau of Labor Statistics

Employment level is other reason of this deterioration. In 2014, there are less employed people than in 2008

Seasonally Adjusted
Series title: (Seas) Employment Level
Labor force status: Employed
Type of data: Number in thousands
Age: 16 years and over



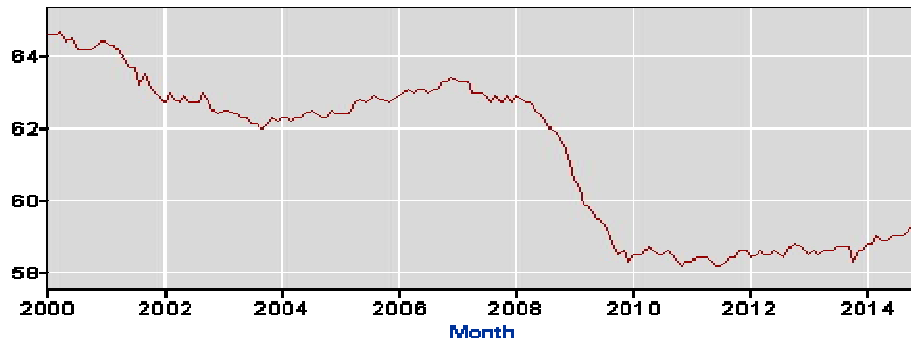
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2000	136559(1)	136598	136701	137270	136630	136940	136531	136662	136893	137088	137322	137614
2001	137778	137612	137783	137299	137092	136873	137071	136241	136846	136392	136238	136047
2002	135701	136438	136177	136126	136539	136415	136413	136705	137302	137008	136521	136426
2003	137417(1)	137482	137434	137633	137544	137790	137474	137549	137609	137984	138424	138411
2004	138472(1)	138542	138453	138680	138852	139174	139556	139573	139487	139732	140231	140125
2005	140245(1)	140385	140654	141254	141609	141714	142026	142434	142401	142548	142499	142752
2006	143150(1)	143457	143741	143761	144089	144353	144202	144625	144815	145314	145534	145970
2007	146028(1)	146057	146320	145586	145903	146063	145905	145682	146244	145946	146595	146273
2008	146378(1)	146156	146086	146132	145908	145737	145532	145203	145076	144802	144100	143369
2009	142152(1)	141640	140707	140656	140248	140009	139901	139492	138818	138432	138659	138013
2010	138438(1)	138581	138751	139297	139241	139141	139179	139438	139396	139119	139044	139301
2011	139250(1)	139394	139639	139586	139624	139384	139524	139942	140183	140368	140826	140902
2012	141596(1)	141877	142050	141916	142204	142387	142281	142278	143028	143404	143345	143298
2013	143249(1)	143359	143352	143622	143842	144003	144300	144284	144447	143537	144555	144684
2014	145092(1)	145185	145772	145677	145792	146214	146438	146464	146834	147374	147389	147439

1: Data affected by changes in population controls.

Source: The Bureau of Labor Statistics

The most important reason of this deterioration is fall of employment –population ratio. The graph shown below tells us this downfall.

Seasonally Adjusted
Series title: (Seas) Employment-Population Ratio
Labor force status: Employment-population ratio
Type of data: Percent or rate
Age: 16 years and over

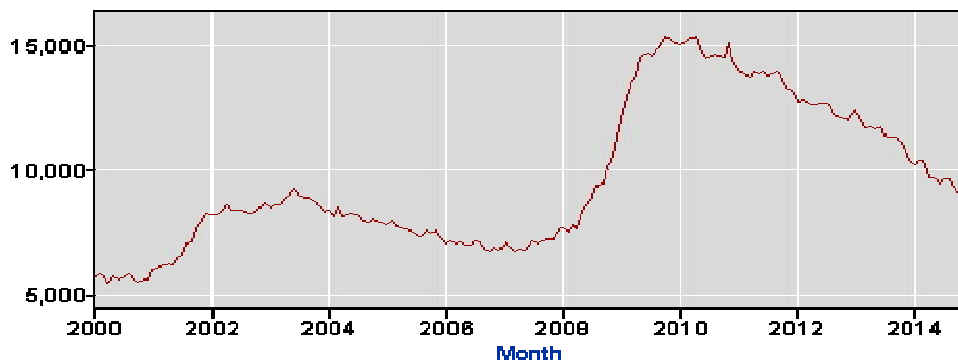


Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2000	64.6	64.6	64.6	64.7	64.4	64.5	64.2	64.2	64.2	64.2	64.3	64.4
2001	64.4	64.3	64.3	64.0	63.8	63.7	63.7	63.2	63.5	63.2	63.0	62.9
2002	62.7	63.0	62.8	62.7	62.9	62.7	62.7	62.7	63.0	62.7	62.5	62.4
2003	62.5	62.5	62.4	62.4	62.3	62.3	62.1	62.1	62.0	62.1	62.3	62.2
2004	62.3	62.3	62.2	62.3	62.3	62.4	62.5	62.4	62.3	62.3	62.5	62.4
2005	62.4	62.4	62.4	62.7	62.8	62.7	62.8	62.9	62.8	62.8	62.7	62.8
2006	62.9	63.0	63.1	63.0	63.1	63.1	63.0	63.1	63.1	63.3	63.3	63.4
2007	63.3	63.3	63.3	63.0	63.0	63.0	62.9	62.7	62.9	62.7	62.9	62.7
2008	62.9	62.8	62.7	62.7	62.5	62.4	62.2	62.0	61.9	61.7	61.4	61.0
2009	60.6	60.3	59.9	59.8	59.6	59.4	59.3	59.1	58.7	58.5	58.6	58.3
2010	58.5	58.5	58.5	58.7	58.6	58.5	58.5	58.6	58.5	58.3	58.2	58.3
2011	58.3	58.4	58.4	58.4	58.3	58.2	58.2	58.3	58.4	58.4	58.6	58.6
2012	58.4	58.5	58.6	58.5	58.5	58.6	58.5	58.4	58.7	58.8	58.7	58.6
2013	58.5	58.6	58.5	58.6	58.6	58.6	58.7	58.7	58.7	58.3	58.6	58.6
2014	58.8	58.8	59.0	58.9	58.9	59.0	59.0	59.0	59.1	59.3	59.2	59.2

Source: The Bureau of Labor Statistics

Although the population of USA has increased, the number of employment has declined. This is another reason of the deterioration of income distribution.

Seasonally Adjusted
Series title: (Seas) Unemployment Level
Labor force status: Unemployed
Type of data: Number in thousands
Age: 16 years and over



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2000	5708	5858	5733	5481	5758	5651	5747	5853	5625	5534	5639	5634
2001	6023	6089	6141	6271	6226	6484	6583	7042	7142	7694	8003	8258
2002	8182	8215	8304	8599	8399	8393	8390	8304	8251	8307	8520	8640
2003	8520	8618	8588	8842	8957	9266	9011	8896	8921	8732	8576	8317
2004	8370	8167	8491	8170	8212	8286	8136	7990	7927	8061	7932	7934
2005	7784	7980	7737	7672	7651	7524	7406	7345	7553	7453	7566	7279
2006	7064	7184	7072	7120	6980	7001	7175	7091	6847	6727	6872	6762
2007	7116	6927	6731	6850	6766	6979	7149	7067	7170	7237	7240	7645
2008	7685	7497	7822	7637	8395	8575	8937	9438	9494	10074	10538	11286
2009	12058	12898	13426	13853	14499	14707	14601	14814	15009	15352	15219	15098
2010	15046	15113	15202	15325	14849	14474	14512	14648	14579	14516	15081	14348
2011	14013	13820	13737	13957	13855	13962	13763	13818	13948	13594	13302	13093
2012	12755	12818	12718	12641	12655	12697	12662	12475	12140	12135	12011	12299
2013	12417	11954	11681	11743	11641	11750	11362	11284	11302	11158	10796	10399
2014	10192	10375	10415	9699	9719	9470	9651	9617	9296	8989	9053	8704

Source: The Bureau of Labor Statistics

Especially, from the last months of 2008 to 2010, the number of unemployed people rose significantly. This situation affects income distribution.

Conclusion

Gini Coefficient in US increased sharply in 2009. Mean income and median income declined for many age groups. Beside this, the ratio of mean income to median income increased for many age groups too. Income inequality for the age group between 45 and 54 years was worsened most in the crisis years compared to other age groups and this was the dominant group on the overall deterioration in income inequality. Although the rise in Gini Coefficient was one if the highest for the age group between 45 and 54 years, the ratio of mean income to median income decreased. We think that the decline in unemployment rate was mostly due to fall in civilian labor participation rate and the main reason behind the deterioration in income equality was the fall in employment – population ratio.

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