

# An Analysis of Consumer Debt:

## *How does Hawaii Compare with the Nation?*

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## Executive Summary

In 2015, Hawaii ranked 2<sup>nd</sup> highest in the nation for total per capita debt, increasing from the 6<sup>th</sup> highest in the nation in 2005. This report examined various consumer debt categories and the major findings were:

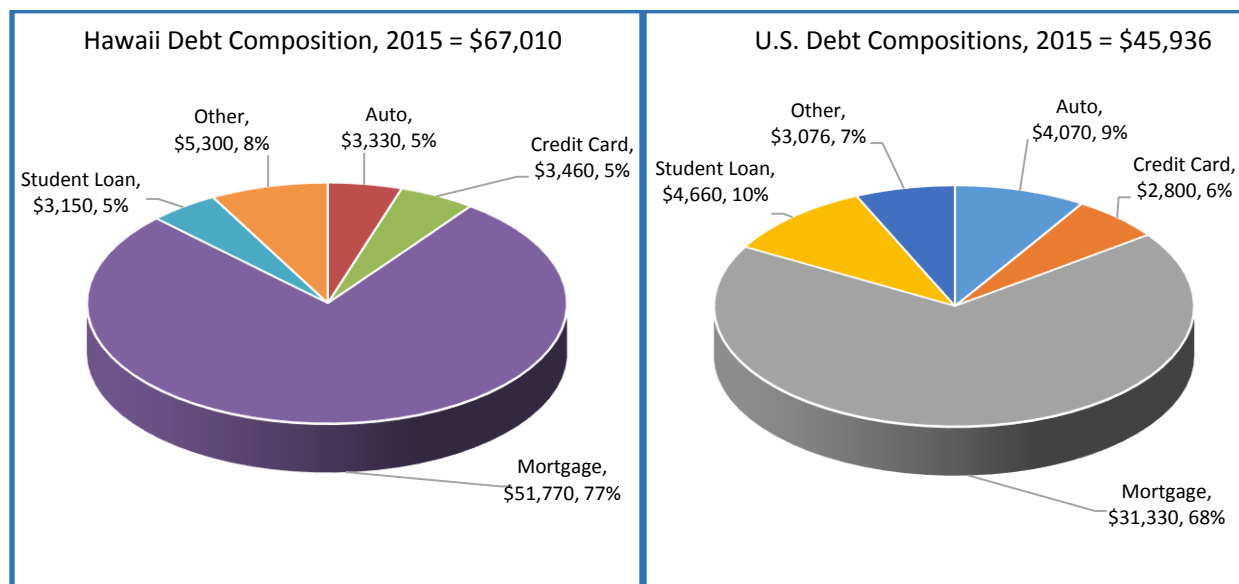
- Hawaii's total consumer debt per capita increased from \$51,810 in 2005 to \$67,010 in 2015, ranking it second in the nation.
  - For the U.S. overall, the post-recession household debt-to-income ratio of 1.30 in 2015 was substantially below the pre-recession level of 1.42 in 2005. In contrast, Hawaii's post-recession household debt-to-income level was actually higher, increasing from 1.70 in 2005 to 1.76 in 2015.
  - Hawaii's total per capita consumer debt in real terms declined by 1.7 percent over the 2005 to 2015 period, while the U.S. declined 10.7 percent during the same period.
- Hawaii ranks low among states for *auto loans* per capita, while defaults for those with auto loans are close to U.S. average.
- Hawaii residents have relatively high *credit card debt* – Hawaii ranked fourth in the nation in 2010 and 2015 for credit card debt per capita.
  - Adjusting for inflation, real credit card debt per capita declined for both Hawaii and the U.S. overall for the 2005 to 2015 period, with Hawaii down 24.4 percent and the U.S. down 25.1 percent.
- For *mortgage debt* per capita, Hawaii has been steadily increasing in the state rankings, from the 6<sup>th</sup> highest state in 2005 to the highest state in 2015. This partially reflects Hawaii's increasing real estate values.
  - As a proportion of total debt, mortgage debt in Hawaii comprised 76.9% in 2005, increasing to 81.2% in 2010, before dipping back to 77.3% in 2015.
  - In real terms, per capita mortgage debt decreased for both Hawaii and the U.S. during this period. However, Hawaii's decrease of 1.3 percent was much lower than the overall U.S. decrease of 6.4 percent.
  - Over the 10-year period analyzed, mortgage delinquencies in Hawaii increased from being the lowest in the United States in 2005 to the 10<sup>th</sup> highest in 2015.

- Hawaii ranks the lowest in the nation for per capita *student debt*.
  - Adjusting for inflation, per capita student debt in real terms increased substantially, more than doubling for both Hawaii and the U.S. during this period. Per capita student debt increased by a factor of 2.2 for Hawaii and 2.3 for the U.S. overall.
  - Focusing on just borrowers with student loans, Hawaii ranks closer to the middle of the states for average student loan balances (based on the address of the borrower, not on the location of the school attended).
  - Hawaii student debt holders have a relatively high default rate (4<sup>th</sup> highest in the nation in 2010, lower in 2015).
  - The number of people with student debt in Hawaii increased by 73 percent between 2004 and 2012, while average debt per borrower increased by 65.5 percent.
  - The average amount of student loans for attending a higher education institution in Hawaii increased substantially between 1998 and 2013. In 1998, less than 30 percent of students had student loans, and upon graduation, the average student loan balance was approximately \$13,500. By 2014, these numbers had increased to about 47 percent of students borrowing, with an average student loan balance upon graduation of over \$24,000.
- For the *other debt* category (home equity lines of credit, consumer cards, and consumer-financed debt), Hawaii leads the nation for the average amount per capita at \$5,300. This partially reflects Hawaii's high residential real estate values and the home equity loan balances supported by these high values.
  - In real terms, per capita debt for the other category decreased for both Hawaii and the U.S., with Hawaii decreasing 28.5 percent and the U.S. decreasing 12.1 percent.

## I. Introduction

This report examines debt per capita and how Hawaii compares with the nation across five categories: auto loans, credit card debt, mortgage loans, student debt, and other debt. In 2015, Hawaii's debt per capita was \$67,010, compared with \$45,936 for the overall U.S. Figure 1 shows consumer debt by category and this figure highlights the major difference in debt structure between Hawaii and the mainland – mortgage debt. For Hawaii, mortgage debt comprised 77 percent of the total versus 68 percent for the U.S. overall.

**Figure 1. Hawaii and the United States, Average Debt Per Capita, 2015**



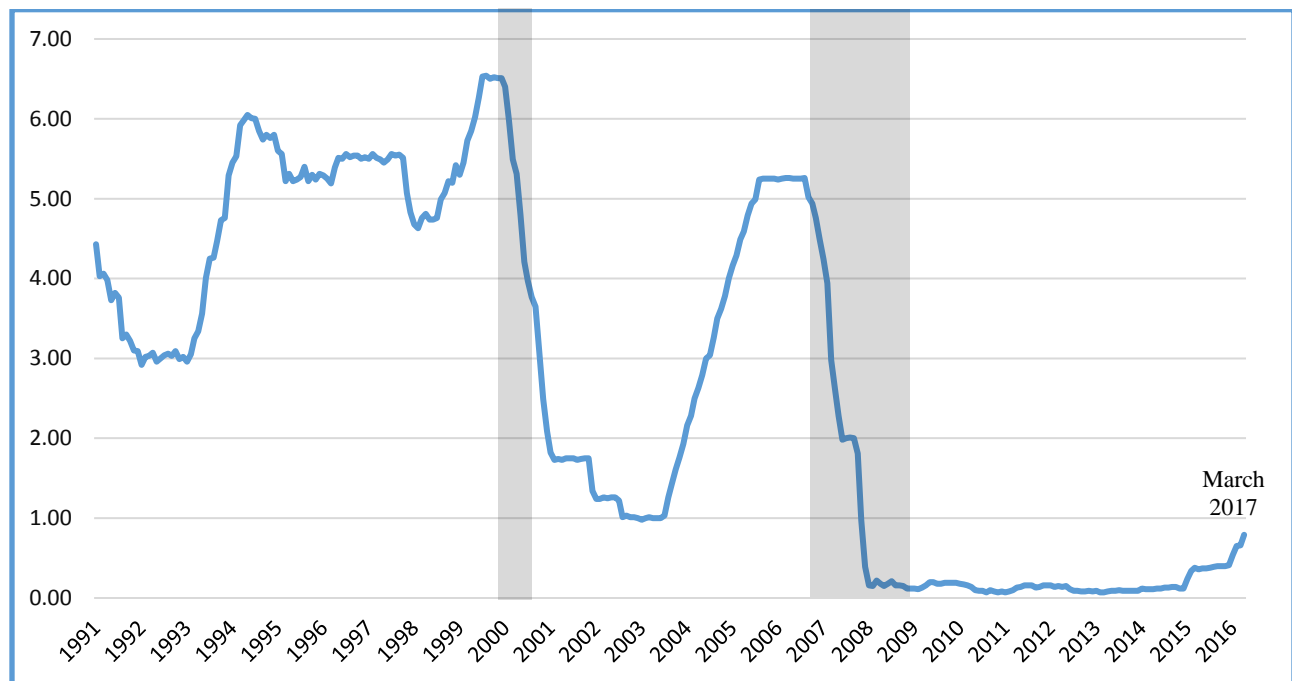
Source: Federal Reserve Bank of New York Consumer Credit Panel / Equifax

***Hawaii is the state with the 2nd highest in per capita debt in the nation, but what does that mean?*** Prior to the Great Recession, the assumption of some macroeconomic models was that greater household debt was linked to greater household wealth, especially in the case of leveraging mortgage debt to build equity (Mian and Sufi, 2016). However after the recession, there are a growing number of researchers who note that households are more sensitive to interest rate increases, particularly if they are coupled with rising unemployment or decreased earnings. The interest rate sensitivity of the overall economy depends on the share of fixed versus variable rate mortgages held by households (Debelle, 2004).

Furthermore, over the medium-term, Mian and Sufi (2016) found that rising household debt was linked with lower economic output and higher unemployment rates. They also noted that a rise in household debt reflects a higher consumption share of GDP (decreasing thereby the production share of GDP) as well as a higher consumption of imports (Mian and Sufi, 2016).

The expansion of U.S. consumer debt in nominal terms can partially be attributed to the U.S. Federal Reserve (the Fed) policy of low interest rates. Since the beginning of 2008, the effective federal funds rate has remained close to zero. However, recently the Fed has gradually started to raise the federal funds rate, with the latest increase of March 2017 to a target rate of between 0.75 and 1.0 percent (Figure 2). Furthermore, many expect further rate hikes in 2017 as inflation hovers around the Fed's target rate of 2.0 percent and unemployment remains stable.

**Figure 2. Effective Federal Funds Rate (percent)**



Source: Federal Reserve Bank of St. Louis 2017

*Shaded areas are recessions (3/2001 to 11/2001 & 12/2007 to 6/2009), the effective rates are non-seasonally adjusted monthly.*

As the economy shifts from a historically low interest rate environment to a rising interest rate environment, it is important to understand consumer debt amounts for mortgages, student loans, credit cards, and other debt. The purpose of this report is to examine per capita debt by category and to compare these amounts to the overall U.S. economy.

## **II. Methodology and Data Sources**

The main data source for this report was Consumer Credit Panel / Equifax data compiled by the Federal Reserve Bank of New York (FRBNY) *State Level Household Debt Statistics 2003-2015* (FRBNY, 2016). A majority of the data was drawn from a random sample of adults with a credit report and a social security number in 2015. For Hawaii, this population was 1.08 million and the random sample used for the analysis was approximately 54,000 (5 percent of 1.08 million). The one exception was the data for student loans, which had a sample of 1 percent drawn from the same population. The data used to represent each respective year is fourth-quarter data.

## **III. Household Debt: A Comparison of Hawaii and the U.S.**

Household debt by itself is not necessarily a negative factor for an economy. Debt allows consumers to purchase houses, cars, and other amenities to enhance their lives. However, household debt payments must be supported with household income and, at a certain point, debt levels become unsustainable.

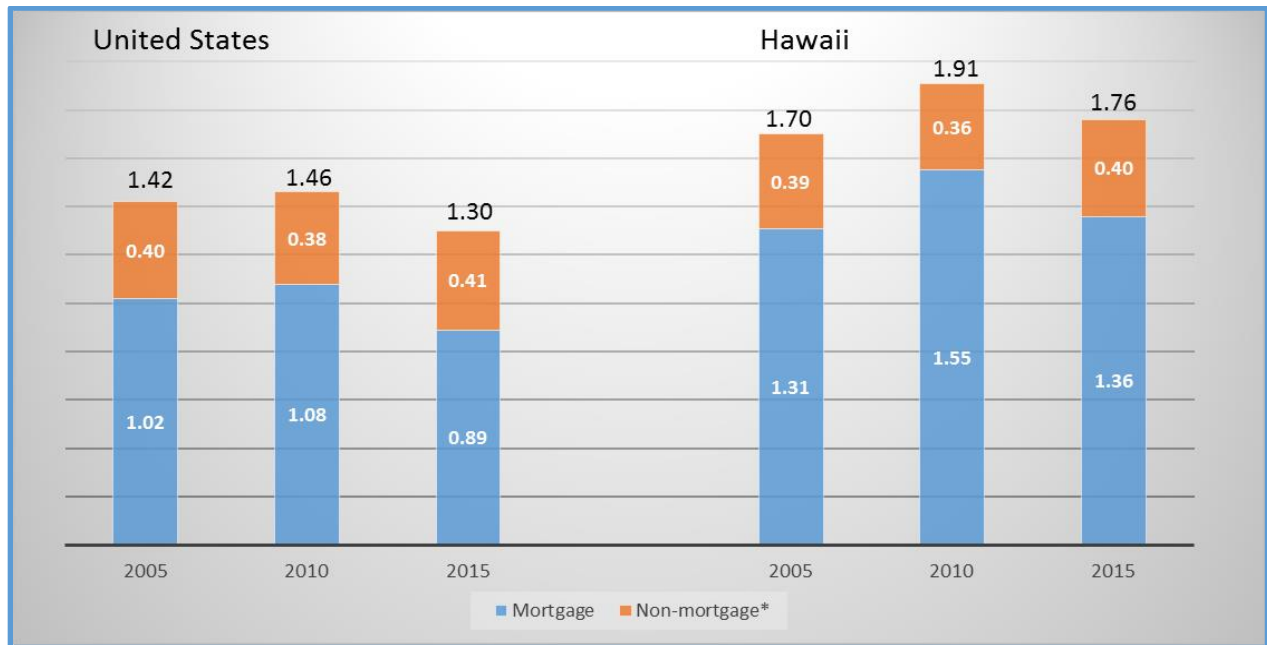
In order to understand household debt burden, it is important to examine the income levels that support that debt. A standard measure of household debt burden is the debt to income ratio. In order to calculate the ratio, the per capita debt data was converted to household level and then divided by average annual household income (Census Bureau ACS, 2016).

Figure 3 shows the household debt-to-income ratio for the U.S. (left side) and Hawaii (right side). Regarding methodology, the mortgage debt-to-income levels are lower than actual households with mortgages, because total mortgage debt was divided by all households, including those without mortgages. For the U.S. overall, the post-recession household debt-to-income level of 1.30 in 2015 was substantially below the pre-recession level of 1.42 in 2005. In contrast, Hawaii's post-recession household debt-to-income level was actually higher, increasing from 1.70 in 2005 to 1.76 in 2015.

The primary reason for the gap between the U.S. and Hawaii was mortgage debt. While non-mortgage debt-to-income ratios were almost exactly the same for Hawaii and the U.S. hovering around 0.40, Hawaii's mortgage debt-to-income ratio of 1.36 was 52.8 percent higher than the U.S. ratio of 0.89 in 2015. The decrease in U.S. mortgage debt reflects a post-recession mortgage

deleveraging. On the other hand, Hawaii’s increase in the mortgage debt-to-income ratio reflects that mortgages have risen faster than income levels.

**Figure 3. Household Debt to Average Annual Household Income Ratio**



\*Non-mortgage debt includes credit card debt, auto loans, student loans, home equity loans and other.  
Source: New York Federal Reserve Bank and U.S. Census Bureau American Community Survey

Table 1 compares Hawaii residents to those in other states on total debt in nominal terms (not adjusted for inflation). The total debt amount is mostly comprised of auto loans, credit card debt, mortgage debt, and student loans. Another category titled “other” includes home equity line of credit (HELOC), consumer finance, and retail cards. In 2015, Hawaii's total debt per capita was \$67,010, which was 45.9 percent higher than the U.S. per capita debt of \$45,936. As will be discussed below, the differential between Hawaii and the U.S. is mainly due to Hawaii's high mortgage debt.



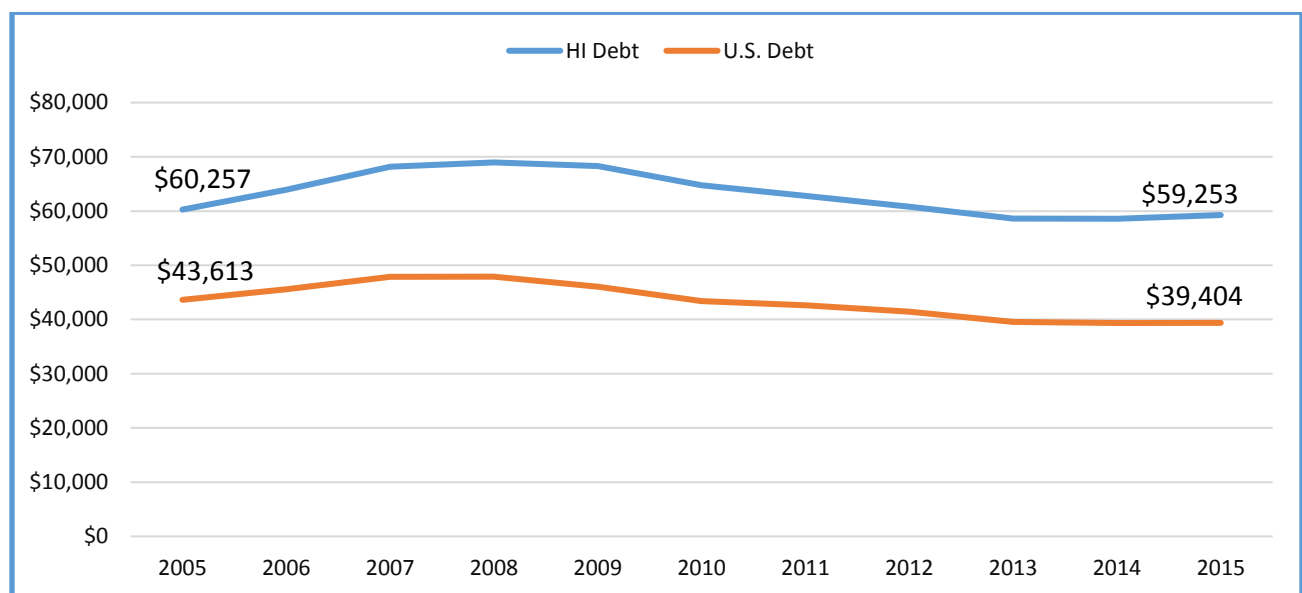
**Table 1. Total Debt – Hawaii and the U.S.**

Rank	State	2005, in \$	Rank	State	2010, in \$	Rank	State	2015, in \$
1	California	65,970	1	California	74,960	1	Maryland	67,020
2	Colorado	57,890	2	Maryland	68,410	2	<b>Hawaii</b>	<b>67,010</b>
3	Maryland	54,670	3	<b>Hawaii</b>	<b>66,130</b>	3	California	65,740
4	Nevada	54,040	4	Virginia	62,250	4	Virginia	62,520
5	Massachusetts	52,820	5	Colorado	61,640	5	Colorado	62,200
6	<b>Hawaii</b>	<b>51,810</b>						
	<b>US Average</b>	<b>40,650</b>		<b>US Average</b>	<b>47,410</b>		<b>US Average</b>	<b>45,936</b>
45	North Dakota	24,300	45	Kentucky	30,560	45	Alabama	34,210
46	Oklahoma	23,470	46	North Dakota	30,380	46	Kentucky	31,940
47	Arkansas	23,250	47	Oklahoma	28,940	47	Oklahoma	31,930
48	Louisiana	20,390	48	Arkansas	27,470	48	Arkansas	30,020
49	West Virginia	19,770	49	Mississippi	25,660	49	Mississippi	28,650
50	Mississippi	18,480	50	West Virginia	24,160	50	West Virginia	27,520

Source: FRBNY Consumer Credit Panel / Equifax

Figure 4 shows the change in debt per capita between 2005 and 2015 in real terms, adjusted for inflation in 2009 chained dollars. Hawaii's total per capita consumer debt, in real terms, declined by 1.7 percent over the 2005 to 2015 period. For the U.S. overall, the decline for real consumer debt per capita was more significant, at 10.7 percent for the same period.

**Figure 4. Total Debt Per Capita for Hawaii and the U.S. (2009 chained dollars)**



Source: FRBNY Consumer Credit Panel / Equifax, calculations by DBEDT

## IV. Debt and Delinquencies by Category

The following sections examine per capita debt by category. The results show that Hawaii ranked higher for mortgage and credit card debt and lower for auto loans and student debt compared with the U.S. overall.

### a. Auto Loans and Delinquencies for Hawaii and the U.S.

Hawaii ranked close to the bottom of the nation on auto loans per capita in 2005, 2010, and in 2015. Table 2 below compares Hawaii with the other states in the nation for auto debt in nominal terms (not adjusted for inflation). In 2015, Hawaii's total per capita auto debt was \$3,300, which was 18.9 percent lower than the U.S. auto debt amount of \$4,070.

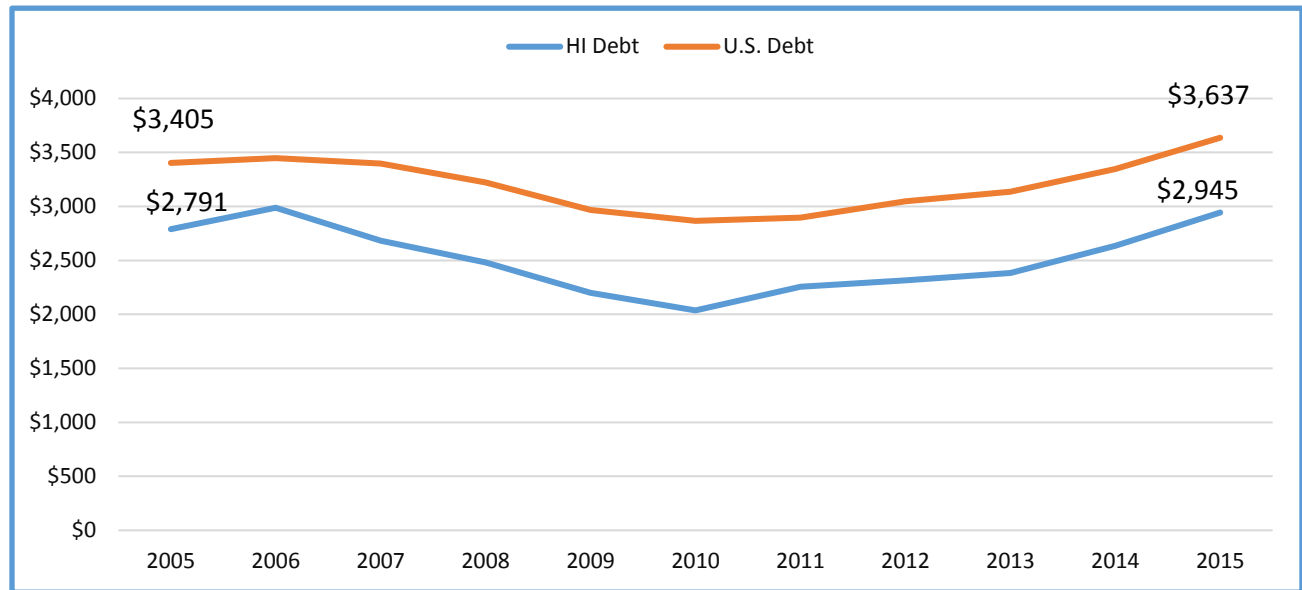
**Table 2. Auto Loan Debt Per Capita for Hawaii and the U.S.**

Rank	State	2005, in \$	Rank	State	2010, in \$	Rank	State	2015, in \$
1	Nevada	4,210	1	Texas	4,220	1	Texas	6,070
2	Texas	4,130	2	Wyoming	4,090	2	Louisiana	5,100
3	Arizona	4,030	3	New Mexico	3,690	3	Wyoming	5,090
4	Maryland	3,980	4	Alaska	3,680	4	Alaska	4,990
5	Georgia	3,780	5	Louisiana	3,590	5	New Mexico	4,910
	<b>US Average</b>	<b>3,240</b>		<b>US Average</b>	<b>2,950</b>		<b>US Average</b>	<b>4,070</b>
45	Montana	2,510	45	Massachusetts	2,450	<b>45</b>	<b>Hawaii</b>	<b>3,330</b>
46	North Dakota	2,410	46	Rhode Island	2,360	46	Connecticut	3,300
<b>47</b>	<b>Hawaii</b>	<b>2,400</b>	47	Oregon	2,290	47	Michigan	3,260
48	Iowa	2,380	48	Minnesota	2,250	48	Oregon	3,220
49	Mississippi	2,350	49	Wisconsin	2,100	49	Wisconsin	3,220
50	Wisconsin	2,250	50	<b>Hawaii</b>	<b>2,080</b>	50	Rhode Island	3,210

Source: FRBNY Consumer Credit Panel / Equifax

Adjusting for inflation, Figure 5 shows the 10 year trend for per capita automobile debt in 2009 chained dollars for the 2005 to 2015 period. In real terms, per capita automobile debt increased 5.5 percent in Hawaii and 6.8 percent in the U.S. during this period. Both Hawaii and the U.S. showed similar trends with real automobile debt declining through the recession, and then increasing during the recovery period as consumers gained confidence.

**Figure 5. Automobile Loan Debt Per Capita in Real Dollars (2009 chained)**



Source: FRBNY Consumer Credit Panel / Equifax, calculations by DBEDT

Comparing per capita auto loan amounts in Table 2 with auto sales in Table 3, the data is generally similar. For example, Hawaii ranks 45<sup>th</sup> in auto loans per capita and 48<sup>th</sup> in auto sales per capita (NADA, 2017).

**Table 3. Auto Sales in United States – Ranked by Sales Per Capita, 2015**

State Rank	State	Total Sales, in \$ millions, 2015	Population by State, 2015	Auto Sales Per Capita, by State in \$, 2015
1	North Dakota	3,500	756,835	4,625
2	New Hampshire	5,400	1,330,111	4,060
3	New Jersey	32,500	8,935,421	3,637
4	South Dakota	3,000	857,919	3,497
5	Nebraska	6,500	1,893,765	3,432
	<b>US Total</b>	<b>862,700</b>	<b>320,896,618</b>	<b>2,688</b>
45	Kentucky	9,700	4,424,611	2,192
46	Washington	15,600	7,160,290	2,179
47	Mississippi	6,100	2,989,390	2,041
<b>48</b>	<b>Hawaii</b>	<b>2,900</b>	<b>1,425,157</b>	<b>2,035</b>
49	Oregon	8,000	4,024,634	1,988
50	Alaska	1,400	737,709	1,898

Source: NADA, US Census, Calculations by DBEDT

On the other hand, auto loan delinquencies show a slightly different picture. Table 4 compares Hawaii with other states for the percent of auto debt balances that 90 days or more delinquent.

While Hawaii's rank for auto loans was 45<sup>th</sup> in the nation, it was 28<sup>th</sup> for delinquencies. In other words, in spite of smaller loan amounts, the ranking for delinquency rates was relatively higher for Hawaii. As with Hawaii, there was no clear relationship between loan amounts per capita and delinquency rates for other states.

**Table 4. Percent of Auto Debt Balance 90+ Days Delinquent, Hawaii and the U.S.**

Rank	State	2005, %	Rank	State	2010, %	Rank	State	2015, %
1	Mississippi	3.37	1	Nevada	9.39	1	South Carolina	5.24
2	South Carolina	3.32	2	Arizona	8.78	2	Georgia	4.93
3	Indiana	2.88	3	Florida	8.03	3	Alabama	4.87
4	Georgia	2.86	4	Georgia	7.85	4	Mississippi	4.84
5	North Carolina	2.86	5	South Carolina	7.54	5	Louisiana	4.72
	<b>US Average</b>	2.13		<b>US Average</b>	5.24		<b>US Average</b>	3.32
<b>30</b>	<b>Hawaii</b>	<b>1.74</b>	<b>22</b>	<b>Hawaii</b>	<b>4.39</b>	<b>28</b>	<b>Hawaii</b>	<b>2.64</b>
45	Minnesota	1.37	45	Wisconsin	2.6	45	Wisconsin	1.86
46	Idaho	1.36	46	Vermont	2.55	46	Oregon	1.79
47	Connecticut	1.33	47	Iowa	2.39	47	Alaska	1.7
48	Vermont	1.28	48	Connecticut	2.34	48	Minnesota	1.68
49	New Jersey	1.24	49	Alaska	2.18	49	Massachusetts	1.66
50	Alaska	1.06	50	North Dakota	1.88	50	North Dakota	1.47

Source: FRBNY Consumer Credit Panel / Equifax

## b. Credit Card Debt and Delinquencies for Hawaii and the U.S.

Hawaii had relatively high credit card debt per capita, ranking the fourth highest state in the nation (Table 5). In 2015, Hawaii's total per capita credit card debt was \$3,460, which was 23.6 percent higher than the U.S. amount of \$2,800. The higher credit card balances for Hawaii residents may be a reflection of the higher cost of living in the state.

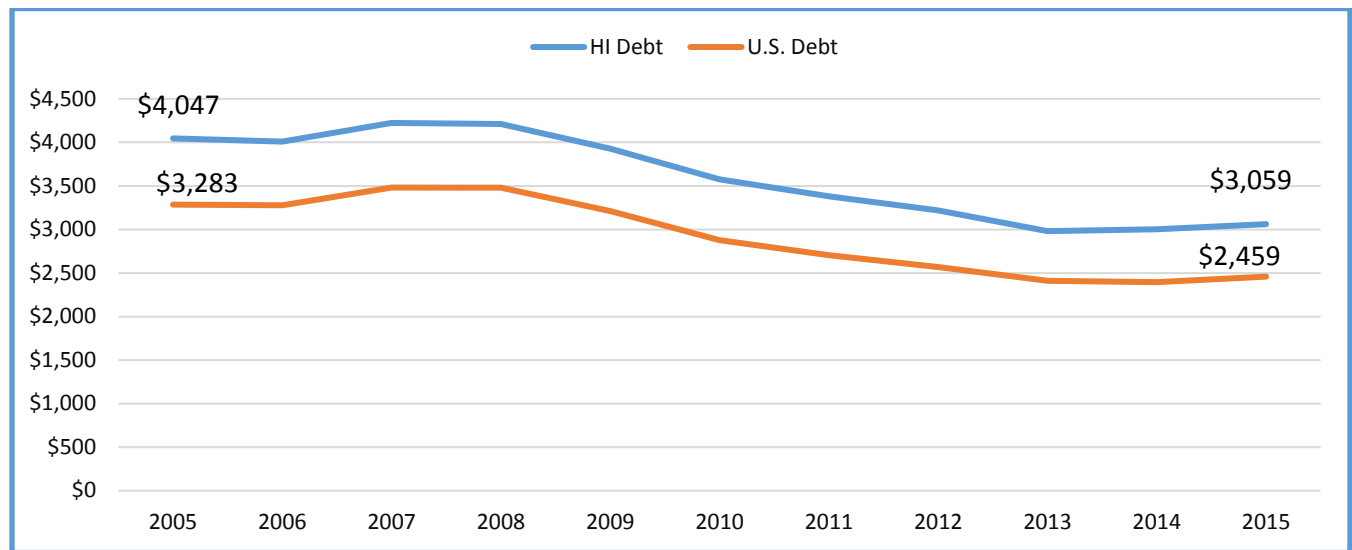
**Table 5. Credit Card Debt Per Capita in the United States**

Rank	State	2005, in \$	Rank	State	2010, in \$	Rank	State	2015, in \$
1	Alaska	4,440	1	Alaska	4,180	1	Alaska	3,920
2	Colorado	3,730	2	Colorado	3,720	2	New Jersey	3,620
3	New York	3,660	3	New Jersey	3,690	3	Connecticut	3,460
4	New Jersey	3,630	<b>4</b>	<b>Hawaii</b>	<b>3,650</b>	<b>4</b>	<b>Hawaii</b>	<b>3,460</b>
5	Massachusetts	3,570	5	Connecticut	3,540	5	Virginia	3,460
<b>8</b>	<b>Hawaii</b>	<b>3,480</b>						
	<b>US Average</b>	<b>3,060</b>		<b>US Average</b>	<b>3,050</b>		<b>US Average</b>	<b>2,800</b>
45	Arkansas	2,520	45	Oklahoma	2,330	45	Louisiana	2,180
46	Alabama	2,510	46	Alabama	2,320	46	Alabama	2,110
47	West Virginia	2,430	47	West Virginia	2,320	47	Kentucky	2,100
48	Louisiana	2,370	48	Louisiana	2,230	48	Arkansas	2,050
49	Kentucky	2,340	49	Arkansas	2,180	49	West Virginia	2,040
50	Mississippi	2,010	50	Mississippi	1,820	50	Mississippi	1,740

Source: FRBNY Consumer Credit Panel / Equifax

Adjusting for inflation, Figure 6 shows the 10-year trend for credit card debt per capita in 2009 chained dollars for the 2005 to 2015 period. In real terms, per capita credit card debt declined for both Hawaii and the U.S. overall, with Hawaii declining 24.4 percent and the overall U.S. declining 25.1 percent during this period. The downward trend for both Hawaii and the U.S. started with the recession, levelled off in 2013, and remained fairly steady from 2013 to 2015. The trend shows consumers tightened budgets during the recession and maintained lower balances during the recovery period.

**Figure 6. Credit Card Per Capita Debt in Real Dollars (2009 chained)**



Source: FRBNY Consumer Credit Panel / Equifax, calculations by DBEDT

In looking at credit card delinquencies, Hawaii's delinquency rates are generally in the middle of the pack. Table 6 shows that, even though Hawaii residents have high levels of credit card debt, they typically tend to pay their credit card bills on time.

**Table 6. Percent of Credit Card Debt Balance 90+ Days Delinquent, Hawaii and the U.S.**

Rank	State	2005, in %	Rank	State	2010, in %	Rank	State	2015, in %
1	Mississippi	13.4	1	Nevada	22.4	1	Nevada	11.0
2	Texas	12.4	2	Florida	20.8	2	Florida	10.5
3	South Carolina	11.4	3	California	17.7	3	Arizona	9.3
4	Alabama	10.7	4	Arizona	17.3	4	Delaware	8.9
5	Louisiana	10.7	5	South Carolina	14.2	5	New Mexico	8.6
<b>31</b>	<b>Hawaii</b>	<b>7.2</b>	<b>18</b>	<b>Hawaii</b>	<b>11.8</b>	<b>24</b>	<b>Hawaii</b>	<b>7.0</b>
	<b>US Average</b>	<b>8.4</b>		<b>US Average</b>	<b>13.3</b>		<b>US Average</b>	<b>7.6</b>
45	New Hampshire	6.2	45	Iowa	9.1	45	Iowa	5.6
46	Washington	6.0	46	South Dakota	8.7	46	Minnesota	5.5
47	North Dakota	5.9	47	Wisconsin	8.6	47	Alaska	5.4
48	Wisconsin	5.8	48	Nebraska	8.3	48	Wisconsin	4.9
49	Minnesota	5.5	49	Alaska	7.6	49	Nebraska	4.8
50	Alaska	5.2	50	North Dakota	7.4	50	North Dakota	3.4

Source: FRBNY Consumer Credit Panel / Equifax

### **c. Mortgage Debt and Delinquencies in Hawaii and the U.S.**

Of all the categories, mortgage debt is the one that weighs the heaviest for Hawaii residents. Hawaii's relative position for per capita mortgage debt progressed from the 6<sup>th</sup> rank in 2005 to the highest rank in 2015, reflecting Hawaii's increasing housing costs. As a proportion of total debt, mortgage debt in Hawaii comprised 76.9% in 2005, increasing to 81.2% in 2010, and then decreasing to 77.3% in 2015.

Economic research shows that in most developed countries, growth in household debt over the past two decades has exceeded that of income. Additionally, in Hawaii, similarly to what was taking place elsewhere in the economically developed countries around the world, the bulk of the increase in household debt has been in the form of borrowing for housing (Debelle, 2004).

There are many benefits to home ownership in Hawaii. The increased levels of mortgage debt have allowed Hawaii residents to own homes and build equity in their homes. Another benefit of home ownership is the ability to reduce taxable income through the mortgage interest deduction. Due to the deductions on the federal income tax, part of the mortgage debt is passed onto the Federal government. Renters are not able to reduce the burden of their housing expenses from the federal income taxes.

However, as noted earlier referencing research by Mian and Sufi, when consumers spend a larger share of their income on mortgage payments, they have less available money to spend on other goods and services. That is, when residents purchase a relatively more expensive home, the higher mortgage payment reduces the disposable income available for other goods and services. On a macro-level, this reduces the production of goods and the need for services. Thereby, this reduced spending eventually (in the medium term) leads to a lower economic output, higher unemployment and reduced tax revenue from general excise taxes. (Mian and Sufi, 2016).

Another important consideration for Hawaii, is the fact that a large portion of the mortgage payment leaks out of the state, reducing the impact that the higher-valued real estate could have on the local economy. This is due to the fact that many of the mortgage holders reside out-of-state (or spend relatively little time at their property in Hawaii).

In addition, also relevant and important to Hawaii, a higher mortgage debt eventually leads to increasing rents, when and if the property is used as an investment rental property. When home owners incur greater mortgage debt, which usually reflects a higher asset value, their net rental

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income decreases or may become negative (if they use their property as an investment rental property) and thus total personal income decreases, eventually negatively affecting the state's GDP.

Table 7 below shows per capita mortgage debt by state in nominal dollars. In addition to Hawaii being ranked the highest for 2015, it is interesting to note that Massachusetts and Nevada dropped out of the top 5 between 2005 and 2015 (replaced by Virginia and Hawaii). In 2015, Hawaii's total per capita mortgage debt was \$51,770, which was 65.2 percent higher than the U.S. mortgage debt amount of \$31,330.

**Table 7. Mortgage Debt Per Capita in the United States**

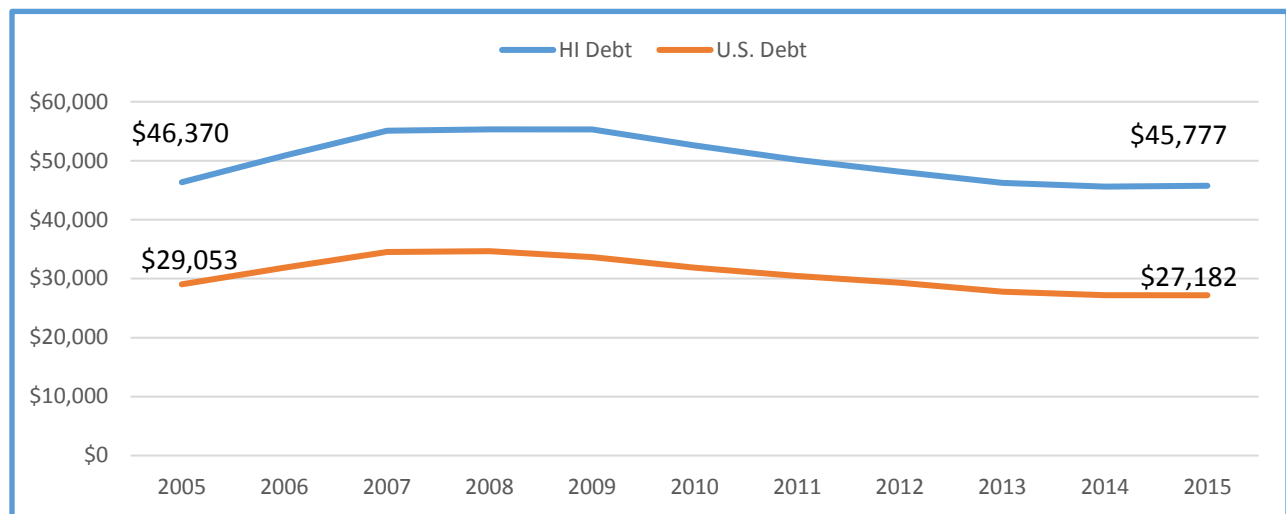
Rank	State	2005, in \$	Rank	State	2010, in \$	Rank	State	2015, in \$
1	California	52,700	1	California	60,330	<b>1</b>	<b>Hawaii</b>	<b>51,770</b>
2	Colorado	44,940	2	Maryland	53,830	2	California	51,190
3	Maryland	41,450	<b>3</b>	<b>Hawaii</b>	<b>53,690</b>	3	Maryland	49,320
4	Nevada	41,280	4	Colorado	48,430	4	Virginia	46,180
5	Massachusetts	40,150	5	Virginia	48,360	5	Colorado	46,050
<b>6</b>	<b>Hawaii</b>	<b>39,870</b>						
	<b>US Average</b>	<b>29,230</b>		<b>US Average</b>	<b>35,010</b>		<b>US Average</b>	<b>31,330</b>
45	Arkansas	14,360	45	Louisiana	19,580	45	Louisiana	20,030
46	Oklahoma	14,340	46	Oklahoma	18,970	46	Kentucky	19,540
47	North Dakota	14,010	47	North Dakota	18,390	47	Oklahoma	18,640
48	West Virginia	11,140	48	Arkansas	18,100	48	Arkansas	17,530
49	Louisiana	10,550	49	Mississippi	15,040	49	West Virginia	14,910
50	Mississippi	9,600	50	West Virginia	14,850	50	Mississippi	14,530

Source: FRBNY Consumer Credit Panel / Equifax

Adjusting for inflation, Figure 7 shows the 10-year trend for per capita mortgage debt for the 2005 to 2015 period (2009 chained dollars). In real terms, per capita mortgage debt decreased for both Hawaii and the U.S. during this period. However, Hawaii's decrease of 1.3 percent was much less than the overall U.S. decrease of 6.4 percent. This partially reflects Hawaii property values' resilience to the recession, which contrasted with the sharp declines for property values for the U.S. overall.



**Figure 7. Mortgage Per Capita Debt in Real Dollars (2009 chained)**



Source: FRBNY Consumer Credit Panel / Equifax, calculations by DBEDT

Over the 10-year period analyzed, Hawaii's ranking for mortgage delinquencies increased from the lowest rank in 2005 to the 10<sup>th</sup> highest in 2015. Similar movements occurred in Nevada, California, and Maryland as property values rose faster than the ability of consumers to keep pace. However, the opposite also occurred in states such as Virginia and Colorado, where delinquency rates remained low even as mortgage debt increased. Table 8 compares the states with the highest and lowest mortgage delinquency rates in the nation and in Hawaii.

**Table 8. Percent of Mortgage Debt Balance 90+ Days Delinquent, Hawaii and the U.S.**

Rank	State	2005, in %	Rank	State	2010, in %	Rank	State	2015, in %
1	Indiana	2.2	1	Florida	20.0	1	New Jersey	5.4
2	Ohio	2.1	2	Nevada	17.3	2	New York	4.8
3	South Carolina	1.9	3	Arizona	10.9	3	Florida	3.9
4	Oklahoma	1.8	4	California	10.5	4	Delaware	3.7
5	Kentucky	1.7	5	New York	10.2	5	Nevada	3.6
			<b>13</b>	<b>Hawaii</b>	<b>6.7</b>	<b>10</b>	<b>Hawaii</b>	<b>2.8</b>
	<b>US Average</b>	0.9		<b>US Average</b>	7.9		<b>US Average</b>	2.1
45	Maryland	0.5	45	Iowa	2.6	45	Wyoming	0.9
46	New Hampshire	0.5	46	Alaska	2.5	46	Nebraska	0.9
47	North Dakota	0.5	47	Wyoming	2.5	47	Alaska	0.8
48	Virginia	0.4	48	Nebraska	2.3	48	South Dakota	0.8
49	California	0.4	49	South Dakota	2.2	49	Colorado	0.8
<b>50</b>	<b>Hawaii</b>	<b>0.3</b>	50	North Dakota	1.5	50	North Dakota	0.6

Source: FRBNY Consumer Credit Panel / Equifax

## d. Student Debt and Delinquencies in Hawaii and the U.S.

The area where Hawaii stood out as having the lowest per capita debt was student debt – Hawaii ranked the lowest in the nation for all three years analyzed, 2005, 2010, and 2015. Table 9 ranks states in the nation and Hawaii on student debt per capita. In 2015, Hawaii's total per capita student debt was \$3,150, which was 32.4 percent lower than the U.S. student debt amount of \$4,660.

When analyzing student debt loads, one must consider the value of an education. It is firmly established in the literature that education levels are positively correlated with earning levels. A recent study showed that a bachelor's degree from the University of Hawaii increases earnings over a lifetime by \$1.5 million for males and \$640,000 for females, for respective 13.5 and 10 percent average annual returns (UHERO, 2016). Earnings can then be used as a proxy for an individual's contribution to the state's GDP showing that higher education levels contribute to GDP growth.

**Table 9. Student Debt Per Capita in the United States**

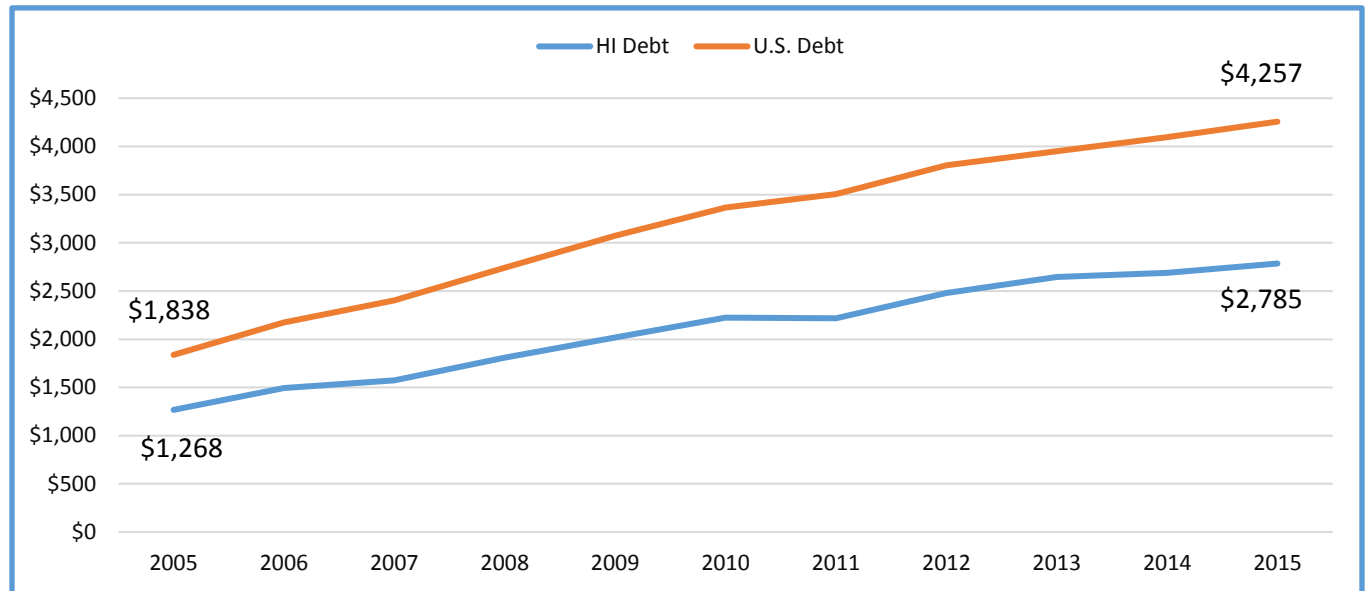
Rank	State	2005, in \$	Rank	State	2010, in \$	Rank	State	2015, in \$
1	New Hampshire	2,320	1	Massachusetts	4,380	1	Georgia	5,870
2	Massachusetts	2,250	2	Minnesota	4,200	2	Minnesota	5,730
3	North Dakota	2,240	3	New York	4,200	3	Maryland	5,670
4	Vermont	2,230	4	Vermont	4,070	4	Massachusetts	5,630
5	South Dakota	2,160	5	Maryland	4,040	5	Ohio	5,510
	<b>US Average</b>	<b>1,610</b>		<b>US Average</b>	<b>3,370</b>		<b>US Average</b>	<b>4,660</b>
45	Wyoming	1,240	45	Utah	2,730	45	West Virginia	3,800
46	North Carolina	1,200	46	New Mexico	2,720	46	New Mexico	3,620
47	Kentucky	1,180	47	Arkansas	2,620	47	Alaska	3,610
48	Arkansas	1,160	48	Wyoming	2,480	48	Nevada	3,430
49	Nevada	1,110	49	Nevada	2,290	49	Wyoming	3,290
<b>50</b>	<b>Hawaii</b>	<b>1,090</b>	<b>50</b>	<b>Hawaii</b>	<b>2,270</b>	<b>50</b>	<b>Hawaii</b>	<b>3,150</b>

Source: FRBNY Consumer Credit Panel / Equifax

Adjusting for inflation, Figure 8 shows the 10-year trend for per capita student debt for the period of 2005 to 2015 (2009 chained dollars). In real terms, per capita student debt increased substantially, more than doubling for both Hawaii and the U.S. during this period. Even in inflation adjusted dollars, per capita student debt increased by a factor of 2.2 for Hawaii and 2.3 for the U.S. overall. This reflects rising tuition costs, combined with reduced financial assistance

and made worse by the rapidly declining state support for public institutions of higher education, just about everywhere in the nation.

**Figure 8. Student Per Capita Debt in Real Dollars (2009 chained)**



Source: FRBNY Consumer Credit Panel / Equifax, calculations by DBEDT

Table 10 compares states for student loan delinquency rates. One would expect that states with lower student debt balances would have lower default rates. However, this is not necessarily the case. For example in 2010, Hawaii had the 4<sup>th</sup> highest student loan delinquency rate in spite of lower student loan amounts and Table 11 sheds some light on this.

**Table 10. Percent of Student Loan Debt Balance 90+ Days Delinquent (and in default)\***

Rank	State	2005, in %	Rank	State	2010, in %	Rank	State	2015, in %
1	Oklahoma	10.56	1	Nevada	14.23	1	West Virginia	18.36
2	West Virginia	9.9	2	Florida	13.65	2	Mississippi	16.34
3	Montana	9.76	3	Louisiana	13.39	3	New Mexico	15.43
4	Nevada	9.08	4	<b>Hawaii</b>	<b>12.89</b>	4	Arkansas	15.25
5	Arizona	8.89	5	Oklahoma	12.49	5	Oklahoma	14.8
21	<b>Hawaii</b>	<b>6.88</b>						
						35	<b>Hawaii</b>	<b>9.59</b>
45	Wisconsin	4.5	45	Vermont	6.1	45	Minnesota	8.54
46	Massachusetts	4.04	46	Wyoming	6.07	46	Connecticut	8.29
47	Connecticut	3.64	47	Minnesota	5.9	47	Nebraska	8.23
48	North Dakota	3.63	48	Iowa	5.82	48	Massachusetts	8.14
49	Minnesota	3.5	49	South Dakota	5.73	49	North Dakota	7.99
50	Vermont	3.49	50	North Dakota	4.76	50	Vermont	7.89

\*The US average delinquency rate data is not available

Source: FRBNY Consumer Credit Panel / Equifax

Student loans per capita only show part of the picture, because the amounts are averaged across the total sample, rather than identifying only those with student loans. When looking at average balances for only those with student loans, Hawaii is closer to the middle for average student loan balances. It is important to note that this ranking is based on the current address of the borrower, not on the location of the school attended (FRBNY Consumer Credit Panel / Equifax).

**Table 11. Average Student Debt Balance per Borrower by State among Borrowers with Outstanding Balance**

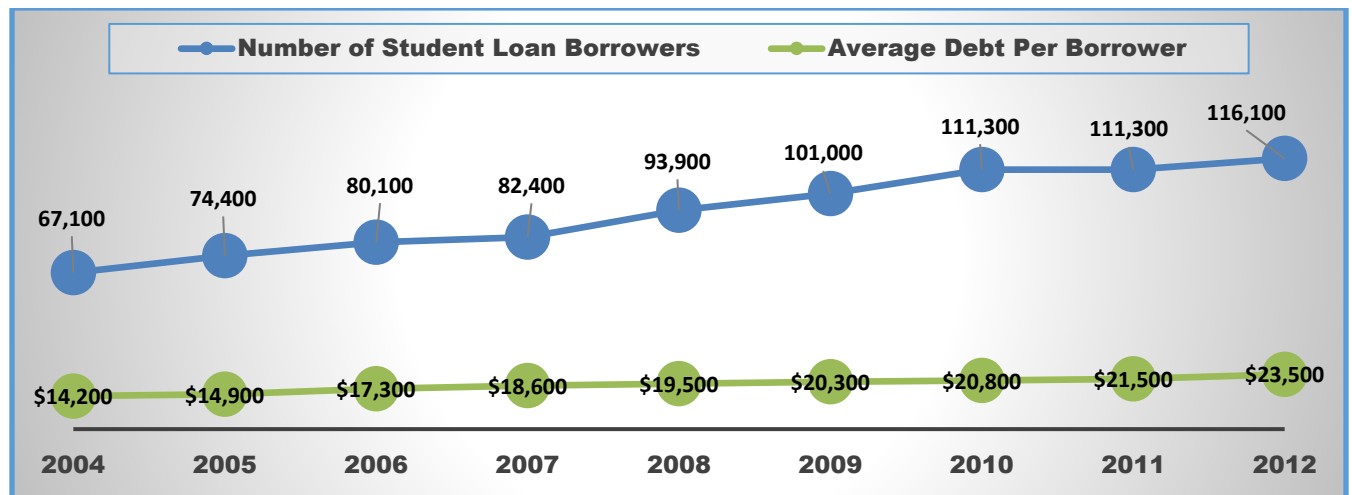
Rank	State	2005, in \$	Rank	State	2010, in \$	Rank	State	2012, in \$
1	Maryland	18,700	1	Maryland	25,300	1	Maryland	28,300
2	New York	17,900	2	New York	24,500	2	Georgia	27,600
3	Massachusetts	17,500	3	Georgia	24,100	3	New York	27,300
4	California	17,400	4	Massachusetts	24,100	4	Delaware	27,200
5	Georgia	17,200	5	Delaware	23,400	5	Illinois	26,400
28	<b><i>Hawaii</i></b>	<b><i>14,900</i></b>	29	<b><i>Hawaii</i></b>	<b><i>20,800</i></b>	30	<b><i>Hawaii</i></b>	<b><i>23,500</i></b>
	<b>US Average</b>	<b>15,800</b>		<b>US Average</b>	<b>21,900</b>		<b>US Average</b>	<b>24,800</b>
45	Utah	13,100	45	Wisconsin	19,500	45	Montana	22,300
46	Minnesota	13,000	46	Iowa	19,400	46	Iowa	22,200
47	Montana	12,700	47	Idaho	19,400	47	Utah	22,200
48	South Dakota	12,600	48	South Dakota	18,900	48	North Dakota	21,500
49	North Dakota	12,400	49	North Dakota	18,300	49	South Dakota	21,100
50	Wyoming	11,300	50	Wyoming	16,700	50	Wyoming	20,700

Source: FRBNY Consumer Credit Panel / Equifax

Figure 9 shows the increase over time of both the number of people holding student debt in Hawaii and the increases for average balances per borrower. The number of people with student debt in Hawaii increased by 73 percent between 2004 and 2012 (the most recent data available). Average debt per borrower also increased significantly, rising by 65.5 percent over the same period.

It is important to note that the sample for student debt data was smaller than the other categories at 1 percent of the population, rather than 5 percent. Therefore, the margin of error is higher for the student debt data. Furthermore, the data is based on the borrower's mailing address at the end of each year and not the address of the school of attendance. Student loans include both federal student loans and private student loans.

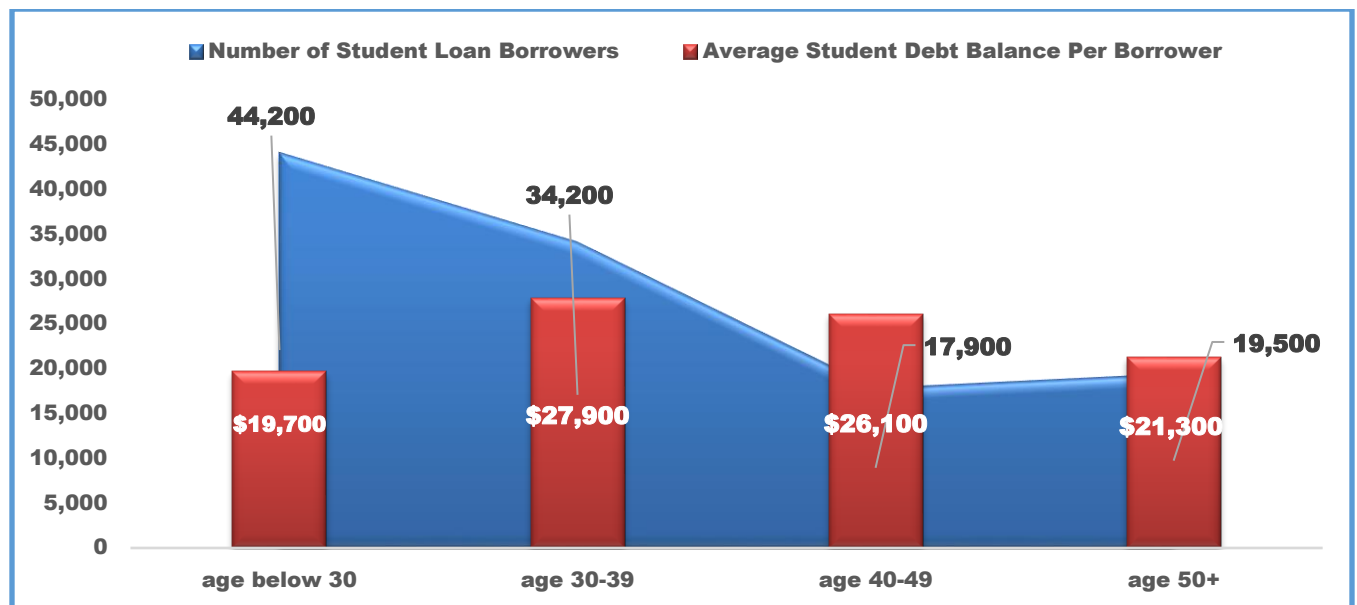
**Figure 9. Number of Student Loan Borrowers and Average Debt per Borrower in Hawaii, 2004 - 2012**



Source: FRBNY Consumer Credit Panel / Equifax

Figure 10 shows the number of borrowers by age and the average balance they carried in 2012. Note that many Hawaii residents carry student debt well into their middle age, with 19,500 people over the age of 50 with an average student debt balance of over \$21,000 per borrower.

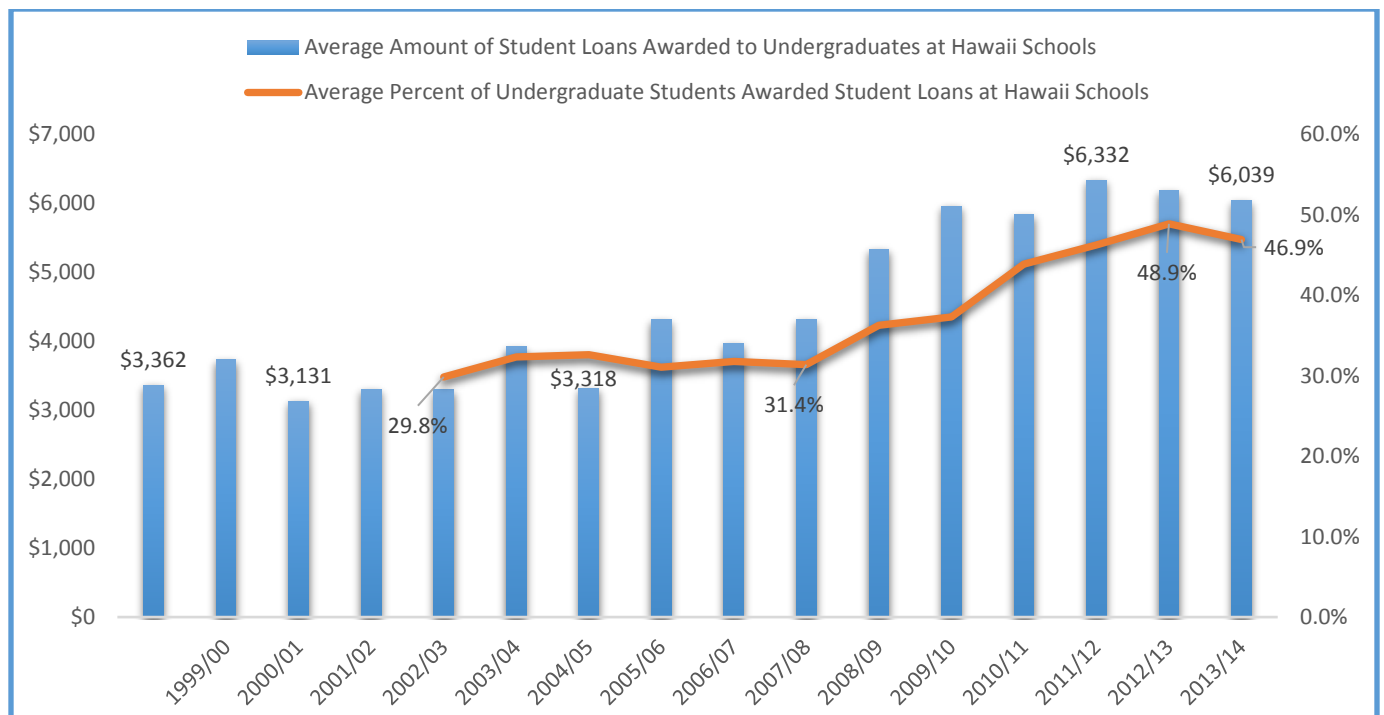
**Figure 10. Number of Borrowers and Average Student Debt Balance per Borrower in Hawaii, 2012**



Source: FRBNY Consumer Credit Panel / Equifax

The data also show that the average amount of student loans awarded to undergraduate students in Hawaii increased from under \$3,400 in 1998/99 to over \$6,000 in 2013/14. Figure 11 shows that both the amounts awarded to undergraduate students as well as the number of students applying for loans increased in Hawaii between 1998 and 2013/14. The average student loan, for the purpose of attending a higher education institution in Hawaii increased substantially between 1998 and 2013. In 1998, approximately 30 percent of students with loans would accumulate about \$13,500 in student debt by graduation. By 2014, these numbers had increased to about 47 percent of students, with an average student loan balance of approximately \$24,000 by graduation.

**Figure 11. Average Amount of Student Loans Awarded to Full-Time Undergraduate Students and Average Percent of Students Getting Student Loans in Hawaii Schools**



Source: U.S. Department of Education – National Center for Education Statistics (IPEDS)

Table 12 shows the percent of students with student loans and the average amount of loans issued for Hawaii’s post-secondary institutions, comparing school years 2003/04 and 2013/14 (given the most recent available data). During this time frame, there were notable increases in both the share of students receiving loans and the average loan amounts; this was especially true among the private for-profit institutions (such as Argosy and University of Phoenix) and private

professional colleges (such as Remington, Hawaii Medical College, Hawaii Institute of Hair Design, among others).

**Table 12. Average Amount of Student Loans and Percent of Undergraduates Awarded Student Loans at Hawaii Post-Secondary Institutions, 2003 and 2013**

Institution Name	Average amount of student loans awarded to full-time first-time undergraduates		Percent of full-time first-time undergraduates awarded student loan	
	2003/04, in \$	2013/14, in \$	2003/04, in %	2013/14, in %
<i>Private for Profit Institutions</i>				
Argosy University-Hawaii	*	9,500	*	83
University of Phoenix-Hawaii	9,230	9,007	11	74
Heald College-Honolulu	9,957	7,840	87	83
<i>Group average</i>	<i>9,594</i>	<i>8,782</i>	<i>49</i>	<i>80</i>
<i>Private Non-Profit Universities</i>				
Brigham Young University-Hawaii	2,165	4,532	16	22
Chaminade University of Honolulu	6,805	6,225	74	54
Hawaii Pacific University	4,754	4,922	40	76
Pacific Rim Christian University	*	6,751	*	30
<i>Group average</i>	<i>4,575</i>	<i>5,608</i>	<i>43.3</i>	<i>45.5</i>
<i>Private Professional Colleges</i>				
Remington College-Honolulu Campus	2,238	9,938	77	90
Med-Assist School of Hawaii Inc	2,468	6,628	62	48
Hawaii Institute of Hair Design	1,120	6,885	32	84
Hawaii Medical College	*	1,186	*	100
Travel Institute of the Pacific	3,947	5,800	60	29
<i>Group average</i>	<i>3,946</i>	<i>6,087</i>	<i>57.8</i>	<i>70.2</i>
<i>Public Universities</i>				
University of Hawaii at Manoa	3,361	6,583	29	37
University of Hawaii-West Oahu	*	4,412	*	28
University of Hawaii at Hilo	3,220	6,978	37	44
University of Hawaii Maui College	3,723	5,244	16	26
Paul Mitchell the School-Honolulu	*	11,594	*	79
<i>Group average</i>	<i>2,576</i>	<i>6,962</i>	<i>27.3</i>	<i>42.8</i>
<i>Public Junior Colleges</i>				
Honolulu Community College	2,360	3,614	6	21
Leeward Community College	3,165	3,876	2	8
Kapiolani Community College	3,527	4,448	3	10
Windward Community College	2,238	4,508	14	24
Hawaii Community College	2,694	5,310	8	12
Kauai Community College	3,610	3,124	8	17
<i>Group average</i>	<i>2,932</i>	<i>4,147</i>	<i>6.8</i>	<i>15.3</i>
<b>Statewide Average (not weighted)**</b>	<b>\$3,921</b>	<b>\$6,039</b>	<b>32.3</b>	<b>46.9</b>

\*no data available for the year

\*\*Statewide average is not weighted since the data does not indicate the number of students receiving loans at each of the institutions nor reports the number of students attending.

Source: U.S. Department of Education – National Center for Education Statistics (IPEDS)

### e. Other Debt: Consumer Cards, Home Equity Line of Credit, Consumer-Financed Debt

The final category of debt to be analyzed is the “other” category, which includes home equity loans, consumer cards, and consumer-financed debt. In this category, Hawaii has the highest per capita amount in the nation, likely due to high home equity debt balances. Table 13 below lists the top and the bottom states in the nation in this “other debt” category. In 2015, Hawaii's total per capita debt for the other category was \$5,300, which was 71.3 percent above the U.S. debt amount of \$3,094.

**Table 13. Other Debt: Home Equity Line of Credit, Consumer Cards, Consumer-Financed Debt, 2015**

Rank	State	2015, in \$
<i>1</i>	<i>Hawaii</i>	<i>5,300</i>
2	Connecticut	4,490
3	New Hampshire	4,260
4	New Jersey	4,250
5	Maryland	4,010
	<b>US Average</b>	<b>3,094</b>
45	Oklahoma	2,260
46	Wisconsin	2,260
47	Nebraska	2,120
48	Texas	2,110
49	Kansas	2,050
50	Arkansas	1,970

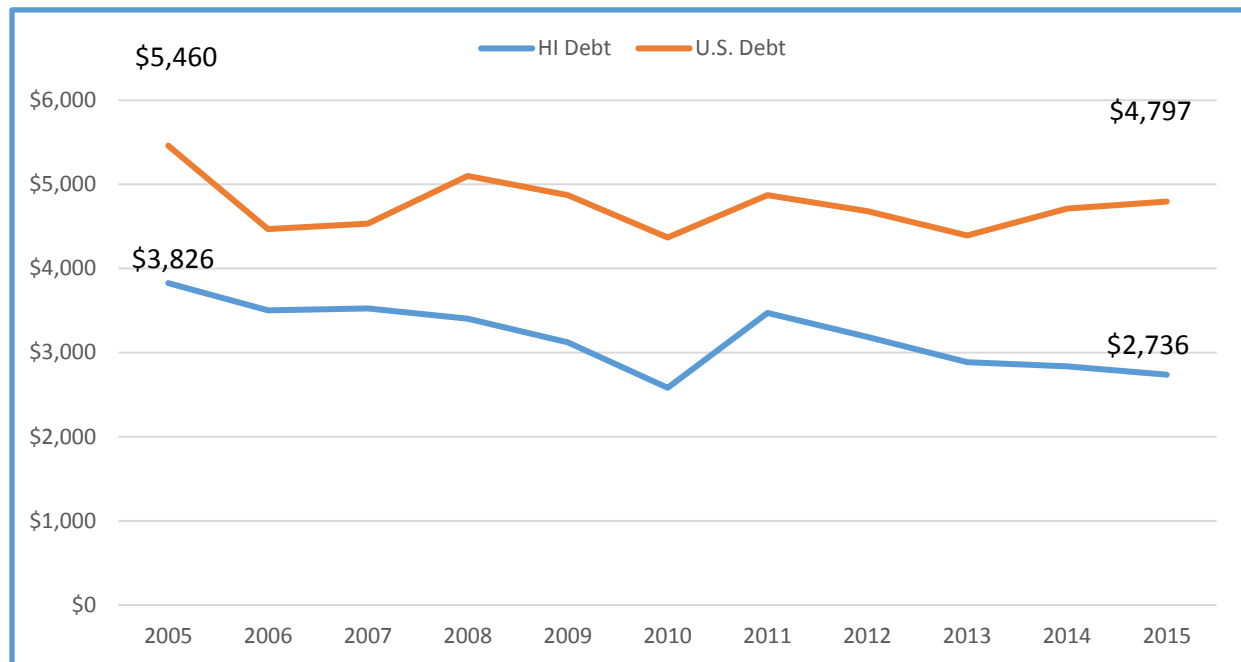
Source: FRBNY Consumer Credit Panel / Equifax

Adjusting for inflation, Figure 12 shows the 10-year trend for per capita in the other debt category (2005 to 2015 period in 2009 chained dollars). In real terms, per capita other debt decreased for both Hawaii and the U.S., with Hawaii decreasing 28.5 percent and the U.S. decreasing 12.1 percent. As noted above, a large portion of the “other” category is home equity loans and the figure below shows how these loans, in real terms, decreased leading into the recession for both the U.S. and Hawaii, and then levelled off for the U.S. On the other hand,



since 2011, Hawaii's other debt has continued on a downward slope as Hawaii consumers have reduced their debt.

**Figure 12. Other Per Capita Debt in Real Dollars (2009 chained)**



Source: FRBNY Consumer Credit Panel / Equifax, calculations by DBEDT

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