Comments (10 March 2016)

The following is taken from the March 2013 GAO Report 13-318 to Congressional Requesters "Offshore Tax Evasion"

From Appendix VI: Additional 2009 Offshore Voluntary Disclosure Program Participant Characteristics

In 2009 there were 142,450,568 tax returns filed in the US
In 2009 people 55 years old and older filed 28% of the returns
In 2009 the average Adjusted Gross Income of all returns filed was $58,005
In 2009 the median income the median Adjusted Gross Income of al returns filed was $32,261

In 2009 there were 10,543 OVDP returns filed in the US
In 2009 people 55 years old and older filed 62% of the returns
In 2009 the average Adjusted Gross Income of all returns filed was $527,610
In 2009 the median Adjusted Gross Income of all returns filed was $136,878

From page 15: "About half of the revenues collected through the 2009 OVDP, as of March 30, 2012, came from 378 cases where taxpayers received offshore penalties of $1 million of greater, meaning they had account balances of $5 million or greater. This group, which we refer to as "large penalty cases", accounted for about 6 percent of the closed 2009 OVDP cases, but the penalties they received amounted to 49 percent of the total $1.9 billion in offshore penalties that had been assessed by IRS at that time."

From GAO Table 2: Selected Penalty Information for 2009 OVDP Individual Taxpayers with Closed Cases as of Nov. 2011

	10th percentile	25th percentile	Median	75th percentile	90th percentile
Offshore account(s) balance	$78,315	$190,365	$568,735	$1,595,805	$4,054,505
2009 OVDP penalty	$13,320	$35,670	$107,949	$310,476	$793,166
Additional tax owed, tax years 2003–2008	$103	$1,661	$12,748	$60,449	$190,399
*Ratio of penalty to tax owed**	129	21.4	8.46	5.13	4.17
*Penalty as proportion of account balance**	17.0%	18.7%	18.9%	19.4%	19.5%

* These two rows were constructed from the data on Table 2.

Figures 1, 2 and 3 below are taken from this table.
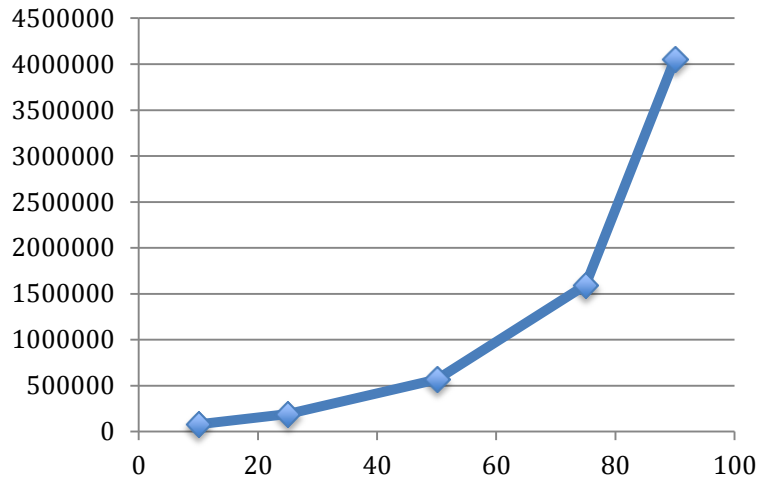
Figure 1. Assets Held by Percentile

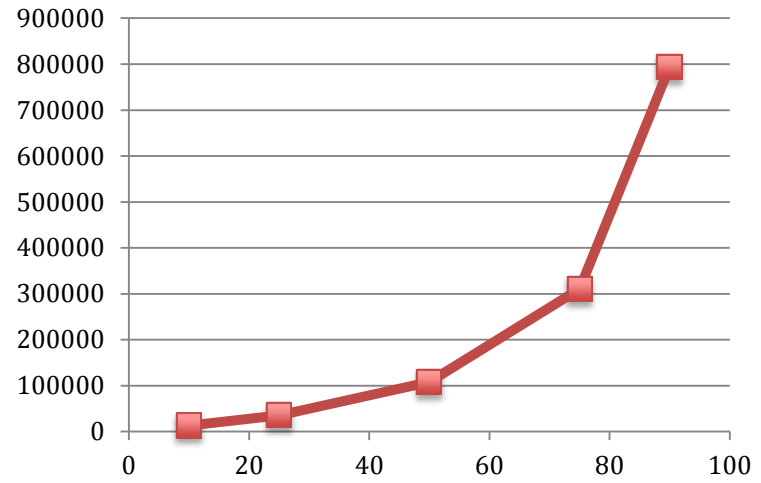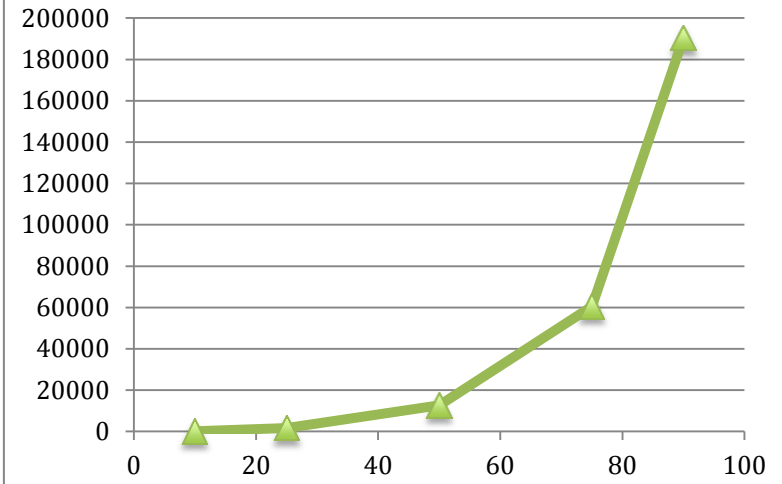**Figure 2. Penalty Paid by Percentile**

**Figure 3. Taxes Paid by Percentile**

Calculating the Average Tax Payment

Using the numbers reported by percentile, and assuming that the percentile values between 10 and 25, 25 and 50, 50 and 75 and 75 and 90 lie on the straight lines joining the points on the figure, the **mean (average) estimated tax payment** by individuals from the 10th through the 90th percentiles is US$37,371 (this is across the six years 2003 through 2008). This would be an average of US$6,228.50 each year over the six years.

This is very different from the **median (the middle) tax payment** of US$12,748 reported in Table 2 of the GAO report. Using the median tax payment to estimate the total taxes paid will severely underestimate the total tax payments because it underweights the tax payments made by people at the high end of the distribution.

The following steps were taken to derive the average tax payment by the people between the 10th percentile and 90th percentile. Figure 4 (below) plots the tax paid by individuals at the 25th and 50th percentiles of the distribution of taxes paid (US$1,661 and US$12,748, respectively). These numbers are taken from the GAO Table 2. The assumption is that the amounts paid by people between the 25th and 50th percentiles results in the line connecting the two points. This assumption means that each point on the line identifies an individual at a point in the distribution of individuals who paid taxes between US$1,661 and US$12,748. If we could add up all of those values and divide by the number of individuals included in this group, we could obtain the total value of taxes paid by the people who are between the 25th and 50th percentiles of the distribution. We can estimate this value by calculating the area under the straight line between the two points.

Figure 4. Taxes Paid I (Sample Calculation)
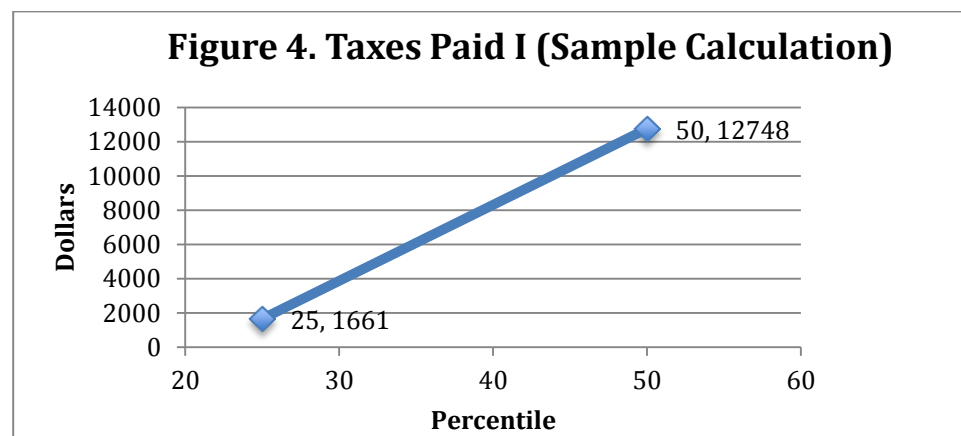
Note that in Figure 4 the end-points of the line connecting the two diamonds are identified as "25, 1661" and "50, 12748". The pairs of numbers identify the percentile of the distribution of tax payments and the tax paid at that distribution. The pair "25, 1661" indicates that at the 25th percentile the tax paid is US$1,661. Similarly, the pair "50, 12748" indicates that at the 50th percentile the tax paid is US$12,748.

We can measure the area under the line in Figure 4 by dividing it into two parts. The first part is the rectangle bounded by the 25th percentile on the left, the 50th percentile on the right, the horizontal lines through 0 and 1,661. The rectangle is 25 units long (from the 25th percentile to the 50th percentile) and 1,661 units high. The second part is the triangle formed by the horizontal line through 1,661, the vertical line through the 50th percentile and the diagonal line that joins the two end-points of the line in Figure 4. This triangle has a base of 25 units (the difference between the 25th percentile and the 50th percentile) and a height of 11,087 units (this is obtained by subtracting the taxes paid at the 25th percentile from the taxes paid at the 50th percentile, 1,661 and 12,748 respectively).

The area of the rectangle is equal to 25 times 1661 or 41,525. The area of the triangle is equal to 25 times 11,087 divided by 2 or 138587.5. Adding the areas of the rectangle and triangle we get a total area of 180,112.5. If we recognize that this area represents the total taxes paid by all of the people between the 25th and 50th percentiles of those who paid taxes, we can divide 180,112.5 by 25 (the proportion of the total population who paid taxes) and find the average tax payment by the people in this part of the distribution. This is US$7,204.50. The rectangle and the triangle are presented in Figure 5.

Figure 5. Taxes Paid II
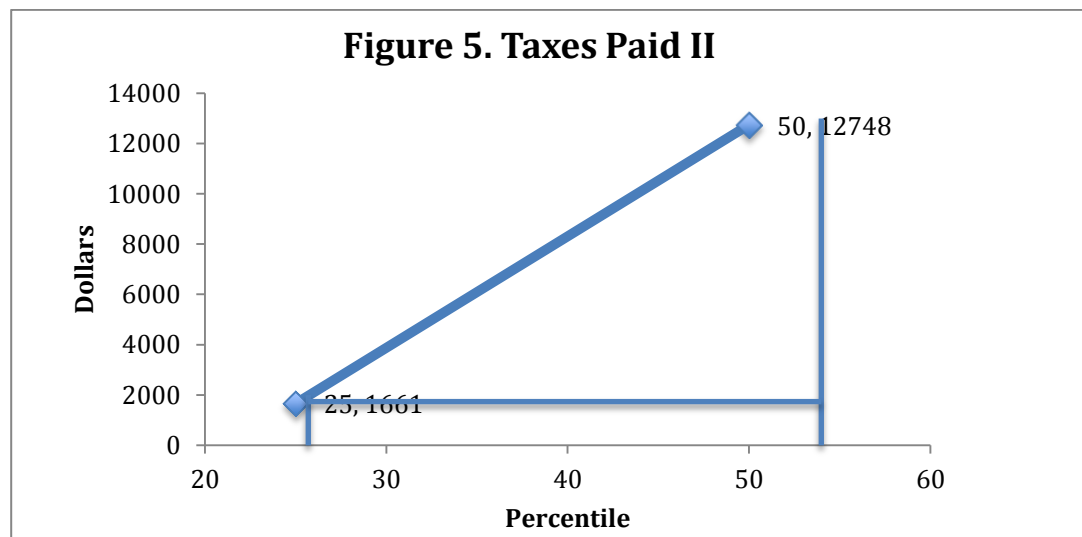
Similarly, we can calculate the areas under the four segments of the "curve" in Figure 3 and divide that number by 80 (because that area represents the taxes paid by 80% of the people who paid taxes) to find that US$37,371 is the average tax payment made by the people between the 10th and 90th percentiles of the distribution of people who paid taxes through the OVDP in 2009. Table 1 below presents the calculations that result in the US$37,371 estimate.

Table 1. Calculation of Mean Tax Payments I

| %tile Range	Rectangle	Triangle	Total
10% to 25%	1545	11685	13230
25% to 50%	41525	138587.5	180112.5
50% to 75%	318700	596262.5	914962.5
75% to 90%	906735	974625	1881360
10%-90%			2989665
mean			37371
median			12748

Adapting the GAO Numbers to Canada

A problem with applying this to Canada is that we have no information about the country of residence status of the 2009 OVDP filers or the incomes of filers by residence status. My suspicion is that many of the 2009 OVDP filers were, in fact, high asset US residents with accounts in foreign financial institutions. A very large proportion of the accounts appear to have been in Swiss banks.

The explanation of GAO Table 2 does not say that there is a direct relationship between the median asset level and the median tax payments. They may be close, however. In the following comments, I am assuming that the median asset values result in the median tax payments. Similarly, the asset value at the 10th percentile is the asset value of the taxpayer at the 10th percentile.

If we assume that the very high asset holders are not representative of the US citizens in Canada, and if we consider the taxes paid by the people from the 10th through the 75th percentiles as representing US citizens in Canada, the estimated tax payment by these individuals across the six years of 2003 through 2008 is US$17,051. This is an average of US$2,842 each year over the six years.

The median estimated tax payment is about US$9,422 over the six years or about US$1,570 per year. Even if we remove the highest taxpayers, the median still underestimates the average tax payment, but the extent of the underestimation is diminished from nearly US$25,000 (US$37,371 versus US$12,748) to less than US$8,000 (US$17,051 versus US$9,422).

The average tax payment for the people between the 10th and 75th percentile is estimated in the same way as described above, only the people (and tax payments) in the range between the 75th and 90th percentiles are excluded. The median tax payment must be estimated. The middle taxpayer in the range from the 10th percentile to the 75th percentile is the taxpayer at the 42.5 percentile. An estimate of this individual's tax payment could be read off of Figure 4 or Figure 6 by reading the tax payment associated with the 42.5 percentile. In Figure 6 this is at the intersection of the vertical line at 42.5 and appears to be something between US$8,000 and US$10,000.

Figure 6. Taxes Paid III (42.5th Percentile)
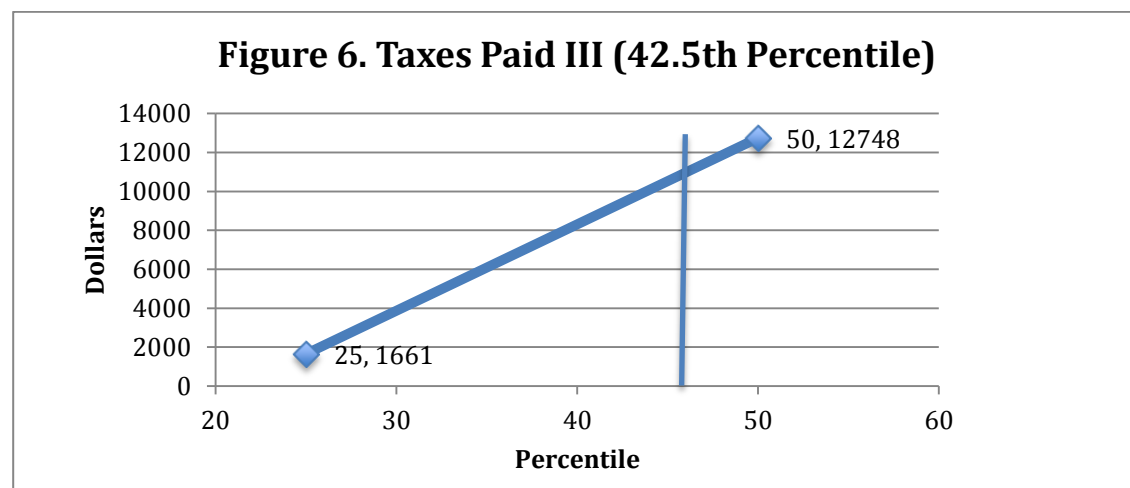
The 42.5th percentile is 70 percent of the way from the 25th percentile to the 50th percentile ((42.5 – 25)/(50 – 25) = 0.70). 70 percent of the way from 1,661 to 12,748 (note from where you got these numbers) is 7760.9 ((12478 – 1661) x 0.7 = 7760.9). But at

the 25th percentile, the tax paid is US$1,661. So we have to add this to US$7,760.9 to get an estimate for the 42.5th percentile of US$9,422. Table 2 summarizes the calculations for the mean tax payment.

Table 2. Calculation of Mean Tax Payments II

%tile Range	Rectangle	Triangle	Total
10% to 25%	1545	11685	13230
25% to 50%	41525	138587.5	180112.5
50% to 75%	318700	596262.5	914962.5
10%-75%			1108305
mean			17051
median			9422

A Further Adaptation

As reported on the 2009 OVDP, the median value of assets held in foreign accounts between the period 2003 and 2008 is US$568,735 (see GAO Table 2). StatsCan reports wealth statistics measured in many different ways. Median gross assets held by family units in Canada in 2005 (in 2005 Cdn dollars) were C$229,930. Net assets were C$148,350. This is reported in http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/famil110-eng.htm

Note that the median gross household wealth in 2005 was less than half of the median value of assets held by OVDP filers over the period 2003-2008. The net household wealth was about a third of the median value of assets held by OVDP filers of this period.

Also, a note from Appendix IV of the March 2013 GAO Report 13-318 cited on the first page that the mean adjusted gross income of all tax filers in the US in 2009 was a about US$58,000 and the median was about US$32,000. The mean and median adjusted gross income of OVDP filers in 2009 was US$527,610 and US$136,878.

According to StatsCan, median total individual income in Canada in 2009 was C$28,840 and in 2013 was C$32,020. These appear to be reported in 2009 and 2013 dollars respectively. This comes from http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/famil105a-eng.htm

If you believe that the typical dual US/Cdn citizen is not different from the typical Canadian who does not have US citizenship, then the numbers on GAO Table 2 above are much too large to represent the dual US/Cdn citizen. Perhaps the people whose experience is captured by the 10th through the 50th percentile on GAO Table 2 will be more representative of dual US/Cdn citizens who are Canadian residents? If this is correct, **the mean tax paid would be about US$4,834 over the six-year period or US$806 per year**. The median tax payment over the six-year period, represented by the tax paid by the individual at the 30th percentile of the original distribution from GAO Table 2, would be about US$3,878. These numbers are estimated in the same manner as the other estimates. Table 3 below summarizes the calculations of the mean tax payment. These numbers relate only to taxes due and do not include any potential penalty charges.

Table 3. Calculation of Mean Tax Payments III

%tile Range	Rectangle	Triangle	Total
10% to 25%	1545	11685	13230
25% to 50%	41525	138587.5	180112.5
10%-50%			193342.5
mean			4834
median			3878

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