

Table T11-0188
Distribution of Tax Units that Pay No Individual Income Tax
by Cash Income Percentile, Administration's FY2012 Budget, 2013¹

Cash Income Percentile ²	Number of Tax Units (thousands) ³	Percentage of Total Tax Units	Number of Non Paying Tax Units (thousands)	Percentage of Total Non Paying Tax Units	Percentage of Non Paying Tax Units in Class
Lowest Quintile	43,362	26.1	39,607	54.8	91.3
Second Quintile	37,681	22.7	21,549	29.8	57.2
Middle Quintile	32,699	19.7	7,888	10.9	24.1
Fourth Quintile	27,208	16.4	1,630	2.3	6.0
Top Quintile	24,067	14.5	375	0.5	1.6
All	166,272	100.0	72,283	100.0	43.5
Addendum					
80-90	12,130	7.3	220	0.3	1.8
90-95	5,919	3.6	76	0.1	1.3
95-99	4,805	2.9	65	0.1	1.4
Top 1 Percent	1,213	0.7	14	0.0	1.1
Top 0.1 Percent	124	0.1	2	0.0	1.6
Addendum II					
Distribution of Individual Income Tax Liability for those with Liability of \$5 or less					
	Percentile of Income Tax Liability Distribution				
	10th	25th	50th	75th	90th
Liability (\$ 2011)	-4,065	-1,372	0	0	0

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0411-2).

parameters of the AMT to inflation after 2011 and allow refundable and non-refundable credits against tentative AMT; b) extend parts of the 2001 and 2003 tax cuts, including marriage penalty relief, the 10, 15, 25, 28 and a portion of the 33 percent brackets, and the 0%/15% rate structure on capital gains and qualified dividends for taxpayers in those brackets; c) reinstate the 39.6 percent bracket and set the threshold for the 36 percent bracket at \$200,000 (single), \$250,000 (married), or \$225,000 (head of household), indexed for inflation after 2009, less the standard deduction and one personal exemption (two if married); d) set the thresholds for PEP and Pease at \$250,000 of AGI (married) and \$200,000 (single), indexed for inflation after 2009; e) tax capital gains and qualified dividends at 20% for taxpayers in the top two brackets and repeal the 8%/18% rates for assets held more than 5 years; f) extend the \$1,000 child tax credit, \$3,000 (not indexed) refundability threshold, and allow against the AMT; g) extend the American Opportunity Tax Credit; h) extend the EITC's 45% phase-in rate for families with 3 or more children and higher phase-out thresholds for married couples; i) extend the maximum credit amount for the child and dependent care tax credit and increase the phase-out threshold to \$75,000 (not indexed); j) provide automatic enrollment in IRAs; and k) limit itemized deductions to 28% for taxpayers in the top two brackets. "Non-paying tax units" are those with individual income tax liability of \$0 or less.

(2) Tax units with negative cash income are excluded from the lowest income class but are included in the totals. For a description of cash income, see <http://www.taxpolicycenter.org/TaxModel/income.cfm>.

The cash income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The breaks are (in 2011 dollars): 20% \$17,909, 40% \$37,090, 60% \$64,531, 80% \$111,344, 90% \$160,377, 95% \$227,314, 99% \$592,985, 99.9% \$2,682,143.

(3) Includes both filing and non-filing units but excludes those that are dependents of other tax units.

Table T11-0188
Distribution of Single Tax Units that Pay No Individual Income Tax
by Cash Income Percentile, Administration's FY2012 Budget, 2013 ¹

Cash Income Percentile ²	Number of Tax Units (thousands) ³	Percentage of Total Tax Units	Number of Non Paying Tax Units (thousands)	Percentage of Total Non Paying Tax Units	Percentage of Non Paying Tax Units in Class
Lowest Quintile	22,633	28.1	21,800	54.9	96.3
Second Quintile	19,666	24.4	12,747	32.1	64.8
Middle Quintile	15,984	19.8	3,729	9.4	23.3
Fourth Quintile	11,872	14.7	494	1.2	4.2
Top Quintile	9,756	12.1	261	0.7	2.7
All	80,622	100.0	39,727	100.0	49.3
Addendum					
80-90	5,145	6.4	144	0.4	2.8
90-95	2,407	3.0	60	0.2	2.5
95-99	1,834	2.3	49	0.1	2.7
Top 1 Percent	370	0.5	7	0.0	2.0
Top 0.1 Percent	34	0.0	0	0.0	0.9
Addendum II					
Distribution of Individual Income Tax Liability for those with Liability of \$5 or less					
Percentile of Income Tax Liability Distribution					
	10th	25th	50th	75th	90th
Liability (\$ 2011)	-464	0	0	0	0

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0411-2).

(1) Calendar year. Individual income tax provisions in the Administration's FY2012 Budget Proposals would a) index the parameters of the AMT to inflation after 2011 and allow refundable and non-refundable credits against tentative AMT; b) extend parts of the 2001 and 2003 tax cuts, including marriage penalty relief, the 10, 15, 25, 28 and a portion of the 33 percent brackets, and the 0%/15% rate structure on capital gains and qualified dividends for taxpayers in those brackets; c) reinstate the 39.6 percent bracket and set the threshold for the 36 percent bracket at \$200,000 (single), \$250,000 (married), or \$225,000 (head of household), indexed for inflation after 2009, less the standard deduction and one personal exemption (two if married); d) set the thresholds for PEP and Pease at \$250,000 of AGI (married) and \$200,000 (single), indexed for inflation after 2009; e) tax capital gains and qualified dividends at 20% for taxpayers in the top two brackets and repeal the 8%/18% rates for assets held more than 5 years; f) extend the \$1,000 child tax credit, \$3,000 (not indexed) refundability threshold, and allow against the AMT; g) extend the American Opportunity Tax Credit; h) extend the EITC's 45% phase-in rate for families with 3 or more children and higher phase-out thresholds for married couples; i) extend the maximum credit amount for the child and dependent care tax credit and increase the phase-out threshold to \$75,000 (not indexed); j) provide automatic enrollment in IRAs; and k) limit itemized deductions to 28% for taxpayers in the top two brackets. "Non-paying tax units" are those with individual income tax liability of \$5 or less and file as single.

(2) Tax units with negative cash income are excluded from the lowest income class but are included in the totals. For a description of cash income, see <http://www.taxpolicycenter.org/TaxModel/income.cfm>. The cash income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The incomes used are adjusted for family size by dividing by the square root of the number of people in the tax unit. The resulting percentile breaks are (in 2011 dollars): 20% \$12,690; 40% \$24,714; 60% \$41,203; 80% \$67,700; 90% \$97,816; 95% \$138,772; 99% \$358,601; 99.9% \$1,621,178.

(3) Includes both filing and non-filing units but excludes those that are dependents of other tax units.

Table T11-0188
Distribution of Married Filing Jointly Tax Units that Pay No Individual Income Tax
by Cash Income Percentile, Administration's FY2012 Budget, 2013 ¹

Cash Income Percentile ²	Number of Tax Units (thousands) ³	Percentage of Total Tax Units	Number of Non Paying Tax Units (thousands)	Percentage of Total Non Paying Tax Units	Percentage of Non Paying Tax Units in Class
Lowest Quintile	1,846	3.2	1,836	12.1	99.5
Second Quintile	3,386	5.9	3,165	20.9	93.5
Middle Quintile	5,584	9.7	4,246	28.0	76.0
Fourth Quintile	11,352	19.6	4,199	27.7	37.0
Top Quintile	35,232	61.0	1,299	8.6	3.7
All	57,802	100.0	15,143	100.0	26.2
Addendum					
80-90	11,550	20.0	890	5.9	7.7
90-95	10,502	18.2	253	1.7	2.4
95-99	10,984	19.0	129	0.9	1.2
Top 1 Percent	2,197	3.8	27	0.2	1.2
Top 0.1 Percent	216	0.4	2	0.0	1.0
Addendum II					
Distribution of Individual Income Tax Liability for those with Liability of \$5 or less					
Percentile of Income Tax Liability Distribution					
	10th	25th	50th	75th	90th
Liability (\$ 2011)	-5,890	-3,163	-455	0	0

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0411-2).

(1) Calendar year. Individual income tax provisions in the Administration's FY2012 Budget Proposals would a) index the parameters of the AMT to inflation after 2011 and allow refundable and non-refundable credits against tentative AMT; b) extend parts of the 2001 and 2003 tax cuts, including marriage penalty relief, the 10, 15, 25, 28 and a portion of the 33 percent brackets, and the 0%/15% rate structure on capital gains and qualified dividends for taxpayers in those brackets; c) reinstate the 39.6 percent bracket and set the threshold for the 36 percent bracket at \$200,000 (single), \$250,000 (married), or \$225,000 (head of household), indexed for inflation after 2009, less the standard deduction and one personal exemption (two if married); d) set the thresholds for PEP and Pease at \$250,000 of AGI (married) and \$200,000 (single), indexed for inflation after 2009; e) tax capital gains and qualified dividends at 20% for taxpayers in the top two brackets and repeal the 8%/18% rates for assets held more than 5 years; f) extend the \$1,000 child tax credit, \$3,000 (not indexed) refundability threshold, and allow against the AMT; g) extend the American Opportunity Tax Credit; h) extend the EITC's 45% phase-in rate for families with 3 or more children and higher phase-out thresholds for married couples; i) extend the maximum credit amount for the child and dependent care tax credit and increase the phase-out threshold to \$75,000 (not indexed); j) provide automatic enrollment in IRAs; and k) limit itemized deductions to 28% for taxpayers in the top two brackets. "Non-paying tax units" are those married individuals with income tax liability of \$5 or less and file as a joint return.

(2) Tax units with negative cash income are excluded from the lowest income class but are included in the totals. For a description of cash income, see <http://www.taxpolicycenter.org/TaxModel/income.cfm>. The cash income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The incomes used are adjusted for family size by dividing by the square root of the number of people in the tax unit. The resulting percentile breaks are (in 2011 dollars): 20% \$12,690; 40% \$24,714; 60% \$41,203; 80% \$67,700; 90% \$97,816; 95% \$138,772; 99% \$358,601; 99.9% \$1,621,178.

(3) Includes both filing and non-filing units but excludes those that are dependents of other tax units.

Table T11-0188
Distribution of Head of Household Tax Units that Pay No Individual Income Tax
by Cash Income Percentile, Administration's FY2012 Budget, 2013 ¹

Cash Income Percentile ²	Number of Tax Units (thousands) ³	Percentage of Total Tax Units	Number of Non Paying Tax Units (thousands)	Percentage of Total Non Paying Tax Units	Percentage of Non Paying Tax Units in Class
Lowest Quintile	4,398	17.4	4,381	25.9	99.6
Second Quintile	6,173	24.4	5,859	34.6	94.9
Middle Quintile	6,665	26.4	5,242	31.0	78.7
Fourth Quintile	4,822	19.1	1,214	7.2	25.2
Top Quintile	3,109	12.3	150	0.9	4.8
All	25,256	100.0	16,935	100.0	67.1
Addendum					
80-90	1,949	7.7	129	0.8	6.6
90-95	732	2.9	16	0.1	2.2
95-99	370	1.5	3	0.0	0.8
Top 1 Percent	58	0.2	2	0.0	3.1
Top 0.1 Percent	5	0.0	0	0.0	0.6
Addendum II					
Distribution of Individual Income Tax Liability for those with Liability of \$5 or less					
Percentile of Income Tax Liability Distribution					
	10th	25th	50th	75th	90th
Liability (\$ 2011)	-6,085	-4,065	-2,655	-628	0

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0411-2).

(1) Calendar year. Individual income tax provisions in the Administration's FY2012 Budget Proposals would a) index the parameters of the AMT to inflation after 2011 and allow refundable and non-refundable credits against tentative AMT; b) extend parts of the 2001 and 2003 tax cuts, including marriage penalty relief, the 10, 15, 25, 28 and a portion of the 33 percent brackets, and the 0%/15% rate structure on capital gains and qualified dividends for taxpayers in those brackets; c) reinstate the 39.6 percent bracket and set the threshold for the 36 percent bracket at \$200,000 (single), \$250,000 (married), or \$225,000 (head of household), indexed for inflation after 2009, less the standard deduction and one personal exemption (two if married); d) set the thresholds for PEP and Pease at \$250,000 of AGI (married) and \$200,000 (single), indexed for inflation after 2009; e) tax capital gains and qualified dividends at 20% for taxpayers in the top two brackets and repeal the 8%/18% rates for assets held more than 5 years; f) extend the \$1,000 child tax credit, \$3,000 (not indexed) refundability threshold, and allow against the AMT; g) extend the American Opportunity Tax Credit; h) extend the EITC's 45% phase-in rate for families with 3 or more children and higher phase-out thresholds for married couples; i) extend the maximum credit amount for the child and dependent care tax credit and increase the phase-out threshold to \$75,000 (not indexed); j) provide automatic enrollment in IRAs; and k) limit itemized deductions to 28% for taxpayers in the top two brackets. "Non-paying tax units" are those with individual income tax liability of \$5 or less and file as head of household.

(2) Tax units with negative cash income are excluded from the lowest income class but are included in the totals. For a description of cash income, see <http://www.taxpolicycenter.org/TaxModel/income.cfm>. The cash income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The incomes used are adjusted for family size by dividing by the square root of the number of people in the tax unit. The resulting percentile breaks are (in 2011 dollars): 20% \$12,690; 40% \$24,714; 60% \$41,203; 80% \$67,700; 90% \$97,816; 95% \$138,772; 99% \$358,601; 99.9% \$1,621,178.

(3) Includes both filing and non-filing units but excludes those that are dependents of other tax units.

Table T11-0188
Distribution of Married Filing Separately Tax Units that Pay No Individual Income Tax
by Cash Income Percentile, Administration's FY2012 Budget, 2013 ¹

Cash Income Percentile ²	Number of Tax Units (thousands) ³	Percentage of Total Tax Units	Number of Non Paying Tax Units (thousands)	Percentage of Total Non Paying Tax Units	Percentage of Non Paying Tax Units in Class
Lowest Quintile	208	8.0	178	37.2	85.5
Second Quintile	354	13.6	100	20.8	28.2
Middle Quintile	671	25.9	58	12.2	8.7
Fourth Quintile	687	26.5	59	12.3	8.6
Top Quintile	618	23.9	32	6.8	5.2
All	2,592	100.0	479	100.0	18.5
Addendum					
80-90	372	14.3	21	4.3	5.6
90-95	120	4.6	6	1.3	5.0
95-99	98	3.8	5	1.0	5.0
Top 1 Percent	28	1.1	1	0.1	2.5
Top 0.1 Percent	6	0.3	0	0.0	1.7
Addendum II					
Distribution of Individual Income Tax Liability for those with Liability of \$5 or less					
Percentile of Income Tax Liability Distribution					
	10th	25th	50th	75th	90th
Liability (\$ 2011)	-1,248	-231	0	0	0

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0411-2).

(1) Calendar year. Individual income tax provisions in the Administration's FY2012 Budget Proposals would a) index the parameters of the AMT to inflation after 2011 and allow refundable and non-refundable credits against tentative AMT; b) extend parts of the 2001 and 2003 tax cuts, including marriage penalty relief, the 10, 15, 25, 28 and a portion of the 33 percent brackets, and the 0%/15% rate structure on capital gains and qualified dividends for taxpayers in those brackets; c) reinstate the 39.6 percent bracket and set the threshold for the 36 percent bracket at \$200,000 (single), \$250,000 (married), or \$225,000 (head of household), indexed for inflation after 2009, less the standard deduction and one personal exemption (two if married); d) set the thresholds for PEP and Pease at \$250,000 of AGI (married) and \$200,000 (single), indexed for inflation after 2009; e) tax capital gains and qualified dividends at 20% for taxpayers in the top two brackets and repeal the 8%/18% rates for assets held more than 5 years; f) extend the \$1,000 child tax credit, \$3,000 (not indexed) refundability threshold, and allow against the AMT; g) extend the American Opportunity Tax Credit; h) extend the EITC's 45% phase-in rate for families with 3 or more children and higher phase-out thresholds for married couples; i) extend the maximum credit amount for the child and dependent care tax credit and increase the phase-out threshold to \$75,000 (not indexed); j) provide automatic enrollment in IRAs; and k) limit itemized deductions to 28% for taxpayers in the top two brackets. "Non-paying tax units" are those married individuals with income tax liability of \$5 or less that file separately.

(2) Tax units with negative cash income are excluded from the lowest income class but are included in the totals. For a description of cash income, see <http://www.taxpolicycenter.org/TaxModel/income.cfm>. The cash income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The incomes used are adjusted for family size by dividing by the square root of the number of people in the tax unit. The resulting percentile breaks are (in 2011 dollars): 20% \$12,690; 40% \$24,714; 60% \$41,203; 80% \$67,700; 90% \$97,816; 95% \$138,772; 99% \$358,601; 99.9% \$1,621,178.

(3) Includes both filing and non-filing units but excludes those that are dependents of other tax units.

Table T11-0188
Distribution of Elderly Tax Units that Pay No Individual Income Tax
by Cash Income Percentile, Administration's FY2012 Budget, 2013 ¹

Cash Income Percentile ²	Number of Tax Units (thousands) ³	Percentage of Total Tax Units	Number of Non Paying Tax Units (thousands)	Percentage of Total Non Paying Tax Units	Percentage of Non Paying Tax Units in Class
Lowest Quintile	5,528	14.9	5,524	27.7	99.9
Second Quintile	8,764	23.6	8,596	43.1	98.1
Middle Quintile	6,501	17.5	3,696	18.5	56.9
Fourth Quintile	6,322	17.1	1,709	8.6	27.0
Top Quintile	9,918	26.8	399	2.0	4.0
All	37,068	100.0	19,959	100.0	53.8
Addendum					
80-90	4,169	11.2	246	1.2	5.9
90-95	2,538	6.8	80	0.4	3.1
95-99	2,591	7.0	62	0.3	2.4
Top 1 Percent	620	1.7	11	0.1	1.8
Top 0.1 Percent	64	0.2	0	0.0	0.4
Addendum II					
Distribution of Individual Income Tax Liability for those with Liability of \$5 or less					
Percentile of Income Tax Liability Distribution					
	10th	25th	50th	75th	90th
Liability (\$ 2011)	0	0	0	0	0

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0411-2).

(1) Calendar year. Individual income tax provisions in the Administration's FY2012 Budget Proposals would a) index the parameters of the AMT to inflation after 2011 and allow refundable and non-refundable credits against tentative AMT; b) extend parts of the 2001 and 2003 tax cuts, including marriage penalty relief, the 10, 15, 25, 28 and a portion of the 33 percent brackets, and the 0%/15% rate structure on capital gains and qualified dividends for taxpayers in those brackets; c) reinstate the 39.6 percent bracket and set the threshold for the 36 percent bracket at \$200,000 (single), \$250,000 (married), or \$225,000 (head of household), indexed for inflation after 2009, less the standard deduction and one personal exemption (two if married); d) set the thresholds for PEP and Pease at \$250,000 of AGI (married) and \$200,000 (single), indexed for inflation after 2009; e) tax capital gains and qualified dividends at 20% for taxpayers in the top two brackets and repeal the 8%/18% rates for assets held more than 5 years; f) extend the \$1,000 child tax credit, \$3,000 (not indexed) refundability threshold, and allow against the AMT; g) extend the American Opportunity Tax Credit; h) extend the EITC's 45% phase-in rate for families with 3 or more children and higher phase-out thresholds for married couples; i) extend the maximum credit amount for the child and dependent care tax credit and increase the phase-out threshold to \$75,000 (not indexed); j) provide automatic enrollment in IRAs; and k) limit itemized deductions to 28% for taxpayers in the top two brackets. "Non-paying tax units" are those with individual income tax liability of \$5 or less and at least the primary of secondary taxpayer is 65 years old.

(2) Tax units with negative cash income are excluded from the lowest income class but are included in the totals. For a description of cash income, see <http://www.taxpolicycenter.org/TaxModel/income.cfm>. The cash income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The incomes used are adjusted for family size by dividing by the square root of the number of people in the tax unit. The resulting percentile breaks are (in 2011 dollars): 20% \$12,690; 40% \$24,714; 60% \$41,203; 80% \$67,700; 90% \$97,816; 95% \$138,772; 99% \$358,601; 99.9% \$1,621,178.

(3) Includes both filing and non-filing units but excludes those that are dependents of other tax units.

Table T11-0188
Distribution of Tax Units with Children that Pay No Individual Income Tax
by Cash Income Percentile, Administration's FY2012 Budget, 2013 ¹

Cash Income Percentile ²	Number of Tax Units (thousands) ³	Percentage of Total Tax Units	Number of Non Paying Tax Units (thousands)	Percentage of Total Non Paying Tax Units	Percentage of Non Paying Tax Units in Class
Lowest Quintile	4,792	9.7	4,783	20.0	99.8
Second Quintile	6,797	13.8	6,768	28.4	99.6
Middle Quintile	8,315	16.8	7,408	31.0	89.1
Fourth Quintile	8,976	18.2	3,645	15.3	40.6
Top Quintile	20,304	41.1	1,031	4.3	5.1
All	49,418	100.0	23,867	100.0	48.3
Addendum					
80-90	7,218	14.6	772	3.2	10.7
90-95	5,979	12.1	185	0.8	3.1
95-99	5,989	12.1	60	0.3	1.0
Top 1 Percent	1,118	2.3	13	0.1	1.2
Top 0.1 Percent	99	0.2	0	0.0	0.4
Addendum II					
Distribution of Individual Income Tax Liability for those with Liability of \$5 or less					
Percentile of Income Tax Liability Distribution					
	10th	25th	50th	75th	90th
Liability (\$ 2011)	-6,600	-4,693	-3,093	-1,269	-123

Source: Urban-Brookings Tax Policy Center Microsimulation Model (version 0411-2).

(1) Calendar year. Individual income tax provisions in the Administration's FY2012 Budget Proposals would a) index the parameters of the AMT to inflation after 2011 and allow refundable and non-refundable credits against tentative AMT; b) extend parts of the 2001 and 2003 tax cuts, including marriage penalty relief, the 10, 15, 25, 28 and a portion of the 33 percent brackets, and the 0%/15% rate structure on capital gains and qualified dividends for taxpayers in those brackets; c) reinstate the 39.6 percent bracket and set the threshold for the 36 percent bracket at \$200,000 (single), \$250,000 (married), or \$225,000 (head of household), indexed for inflation after 2009, less the standard deduction and one personal exemption (two if married); d) set the thresholds for PEP and Pease at \$250,000 of AGI (married) and \$200,000 (single), indexed for inflation after 2009; e) tax capital gains and qualified dividends at 20% for taxpayers in the top two brackets and repeal the 8%/18% rates for assets held more than 5 years; f) extend the \$1,000 child tax credit, \$3,000 (not indexed) refundability threshold, and allow against the AMT; g) extend the American Opportunity Tax Credit; h) extend the EITC's 45% phase-in rate for families with 3 or more children and higher phase-out thresholds for married couples; i) extend the maximum credit amount for the child and dependent care tax credit and increase the phase-out threshold to \$75,000 (not indexed); j) provide automatic enrollment in IRAs; and k) limit itemized deductions to 28% for taxpayers in the top two brackets. "Non-paying tax units" are those with individual income tax liability of \$5 or less and has at least one home or away dependent exemption.

(2) Tax units with negative cash income are excluded from the lowest income class but are included in the totals. For a description of cash income, see <http://www.taxpolicycenter.org/TaxModel/income.cfm>. The cash income percentile classes used in this table are based on the income distribution for the entire population and contain an equal number of people, not tax units. The incomes used are adjusted for family size by dividing by the square root of the number of people in the tax unit. The resulting percentile breaks are (in 2011 dollars): 20% \$12,690; 40% \$24,714; 60% \$41,203; 80% \$67,700; 90% \$97,816; 95% \$138,772; 99% \$358,601; 99.9% \$1,621,178.

(3) Includes both filing and non-filing units but excludes those that are dependents of other tax units.