

1. ANEXOS (parte 2)

Table C-4
Statistical Sample Evaluation for Attributes Sampling
Two-sided Precision Intervals
Sample Deviation Rate = 2%

90% Confidence Level

Sample size	Population							
	1,000		2,000		10,000		50,000+	
	LL	UL	LL	UL	LL	UL	LL	UL
50	.2	9.1	.1	9.2	.1	9.3	.1	9.3
80	.4	6.8	.3	6.9	.3	7.0	.3	7.0
90	.4	6.4	.4	6.5	.3	6.6	.3	6.6
100	.4	6.0	.4	6.1	.4	6.2	.4	6.2
120	.6	5.5	.5	5.6	.5	5.7	.5	5.7
140	.6	5.1	.6	5.2	.5	5.3	.5	5.3
150	.7	4.9	.6	5.0	.6	5.1	.6	5.1
180	.8	4.6	.7	4.7	.7	4.8	.7	4.8
200	.8	4.3	.8	4.4	.7	4.5	.7	4.5
250	1.0	4.0	.9	4.2	.9	4.3	.9	4.3
300	1.2	3.5	1.1	3.7	1.0	3.8	1.0	3.8
500	1.4	2.9	1.3	3.2	1.2	3.3	1.2	3.3
700			1.4	2.9	1.3	3.0	1.3	3.1
1,000			1.6	2.6	1.4	2.8	1.4	2.8

95% Confidence Level

Sample size	Population							
	1,000		2,000		10,000		50,000+	
	LL	UL	LL	UL	LL	UL	LL	UL
50	.1	10.4	.1	10.6	.1	10.6	.1	10.6
80	.3	7.7	.2	7.8	.2	7.9	.2	8.0
90	.3	7.2	.3	7.3	.2	7.4	.2	7.4
100	.3	6.8	.3	6.9	.3	7.0	.2	7.0
120	.4	6.1	.4	6.3	.3	6.4	.3	6.4
140	.5	5.7	.4	5.8	.4	6.0	.4	6.0
150	.5	5.4	.5	5.6	.4	5.7	.4	5.7
180	.7	5.1	.6	5.2	.5	5.3	.5	5.4
200	.7	4.7	.6	4.9	.6	5.0	.6	5.0
250	.9	4.4	.8	4.6	.7	4.8	.7	4.8
300	1.1	3.8	1.0	4.0	.9	4.2	.9	4.2
500			1.2	3.4	1.1	3.5	1.1	3.6
700			1.3	3.0	1.2	3.2	1.2	3.3
1,000					1.3	3.0	1.3	3.0

LL=Lower Precision Limit
 UL=Upper Precision Limit

Table C-5
Statistical Sample Evaluation for Attributes Sampling
Two-sided Precision Intervals
Sample Deviation Rate = 3%

90% Confidence Level

Sample size	Population							
	1,000		2,000		10,000		50,000+	
	LL	UL	LL	UL	LL	UL	LL	UL
80	.8	8.2	.7	8.3	.7	8.4	.7	8.4
90	.9	7.8	.8	7.9	.8	8.0	.8	8.0
100	.9	7.4	.9	7.5	.8	7.6	.8	7.6
120	1.1	6.8	1.0	6.9	1.0	7.0	1.0	7.0
140	1.2	6.4	1.2	6.6	1.1	6.7	1.1	6.7
150	1.3	6.2	1.2	6.4	1.1	6.5	1.1	6.5
180	1.4	5.9	1.4	6.0	1.3	6.2	1.3	6.2
200	1.5	5.6	1.4	5.7	1.4	5.8	1.3	5.9
250	1.7	5.3	1.6	5.5	1.6	5.6	1.5	5.7
300	1.9	4.8	1.8	4.9	1.7	5.1	1.7	5.1
500	2.3	4.1	2.1	4.3	2.0	4.5	2.0	4.5
700			2.3	4.0	2.2	4.2	2.1	4.2
1,000			2.5	3.7	2.3	3.9	2.3	4.0

95% Confidence Level

Sample size	Population							
	1,000		2,000		10,000		50,000+	
	LL	UL	LL	UL	LL	UL	LL	UL
80	.6	9.2	.6	9.3	.5	9.5	.5	9.5
90	.7	8.7	.6	8.8	.6	8.9	.6	8.9
100	.7	8.3	.7	8.4	.6	8.5	.6	8.5
120	.9	7.5	.8	7.6	.8	7.8	.8	7.8
140	1.0	7.1	.9	7.3	.9	7.4	.9	7.4
150	1.1	6.8	1.0	7.0	.9	7.1	.9	7.1
180	1.2	6.4	1.1	6.6	1.1	6.8	1.1	6.8
200	1.3	6.1	1.2	6.2	1.1	6.4	1.1	6.4
250	1.5	5.8	1.4	6.0	1.3	6.1	1.3	6.2
300	1.8	5.1	1.6	5.3	1.5	5.5	1.5	5.5
500			2.0	4.6	1.8	4.8	1.8	4.8
700			2.1	4.2	2.0	4.4	2.0	4.5
1,000					2.2	4.1	2.1	4.2

LL=Lower Precision Limit
 UL=Upper Precision Limit

Table C-6
Statistical Sample Evaluation for Attributes Sampling
Two-sided Precision Intervals
Sample Deviation Rate = 5%

90% Confidence Level

Sample size	Population							
	1,000		2,000		10,000		50,000+	
	LL	UL	LL	UL	LL	UL	LL	UL
80	1.8	10.9	1.8	11.0	1.7	11.1	1.7	11.1
90	2.0	10.4	1.9	10.5	1.9	10.6	1.9	10.7
100	2.1	10.0	2.1	10.1	2.0	10.3	2.0	10.3
120	2.4	9.4	2.3	9.5	2.2	9.6	2.2	9.7
140	2.6	9.0	2.5	9.2	2.4	9.3	2.4	9.3
150	2.7	8.7	2.6	8.9	2.5	9.0	2.5	9.0
180	2.9	8.3	2.8	8.4	2.7	8.6	2.7	8.6
200	3.0	8.0	2.9	8.2	2.8	8.3	2.8	8.4
250	3.3	7.5	3.1	7.7	3.0	7.9	3.0	7.9
300	3.4	7.2	3.3	7.4	3.2	7.6	3.2	7.6
500	4.0	6.4	3.7	6.7	3.6	6.9	3.5	6.9
700			4.0	6.3	3.8	6.5	3.8	6.6
1,000			4.2	5.9	4.0	6.2	3.9	6.3

95% Confidence Level

Sample size	Population							
	1,000		2,000		10,000		50,000+	
	LL	UL	LL	UL	LL	UL	LL	UL
80	1.5	12.0	1.5	12.2	1.4	12.3	1.4	12.3
90	1.7	11.4	1.6	11.6	1.5	11.7	1.5	11.7
100	1.8	11.0	1.7	11.1	1.7	11.3	1.6	11.3
120	2.1	10.2	2.0	10.4	1.9	10.5	1.9	10.6
140	2.3	9.8	2.2	10.0	2.1	10.1	2.1	10.1
150	2.3	9.4	2.2	9.6	2.1	9.8	2.1	9.8
180	2.6	8.9	2.4	9.1	2.3	9.2	2.3	9.3
200	2.7	8.6	2.6	8.8	2.5	9.0	2.4	9.0
250	3.0	8.0	2.8	8.3	2.7	8.4	2.7	8.5
300	3.2	7.6	3.0	7.9	2.9	8.1	2.8	8.1
500			3.5	7.0	3.3	7.2	3.3	7.3
700			3.8	6.5	3.6	6.8	3.5	6.9
1,000					3.8	6.5	3.8	6.5

LL=Lower Precision Limit
 UL=Upper Precision Limit

Table C-7
Statistical Sample Evaluation for Attributes Sampling
Two-sided Precision Intervals
Sample Deviation Rate = 10%

90% Confidence Level

Sample size	Population							
	1,000		2,000		10,000		50,000+	
	LL	UL	LL	UL	LL	UL	LL	UL
80	5.3	17.1	5.2	17.2	5.1	17.3	5.1	17.3
90	5.6	16.5	5.5	16.7	5.4	16.8	5.4	16.8
100	5.8	16.1	5.6	16.2	5.6	16.4	5.5	16.4
120	6.1	15.4	6.0	15.5	5.9	15.7	5.9	15.7
140	6.4	14.8	6.3	15.0	6.2	15.2	6.2	15.2
150	6.6	14.4	6.4	14.6	6.3	14.8	6.3	14.8
180	6.9	14.1	6.7	14.3	6.6	14.4	6.6	14.5
200	7.1	13.8	6.9	14.0	6.8	14.2	6.8	14.2
250	7.5	13.2	7.3	13.5	7.1	13.7	7.1	13.7
300	7.8	12.8	7.5	13.1	7.4	13.3	7.3	13.3
500	8.5	11.8	8.2	12.2	8.0	12.4	7.9	12.5
700			8.6	11.7	8.3	12.0	8.2	12.1
1,000			8.9	11.2	8.6	11.6	8.5	11.7

95% Confidence Level

Sample size	Population							
	1,000		2,000		10,000		50,000+	
	LL	UL	LL	UL	LL	UL	LL	UL
80	4.6	18.4	4.5	18.6	4.4	18.7	4.4	18.8
90	4.9	17.8	4.8	17.9	4.7	18.1	4.7	18.1
100	5.2	17.3	5.0	17.4	4.9	17.6	4.9	17.6
120	5.6	16.4	5.4	16.6	5.3	16.8	5.3	16.8
140	5.9	15.8	5.7	16.0	5.6	16.2	5.6	16.2
150	6.0	15.5	5.9	15.7	5.7	15.9	5.7	15.9
180	6.4	14.8	6.2	15.1	6.1	15.3	6.0	15.3
200	6.6	14.5	6.4	14.8	6.3	15.0	6.2	15.0
250	7.0	13.8	6.8	14.1	6.6	14.4	6.6	14.4
300	7.4	13.3	7.1	13.7	6.9	13.9	6.9	14.0
500			7.9	12.6	7.6	12.9	7.5	13.0
700			8.3	12.0	8.0	12.4	7.9	12.5
1,000					8.3	11.9	8.2	12.0

LL=Lower Precision Limit
 UL=Upper Precision Limit

APPENDIX D

Probability-Proportional-to-Size (PPS) Sampling Tables for Computing Sample Size and Evaluating Results

Table D-1: Expansion Factors for Expected Misstatements for PPS Sampling

Table D-2: Reliability Factors for Misstatements of Overstatement for PPS Sampling

Table D-3: Formulas to Evaluate PPS Sample Results

Table D-1
Expansion Factors for Expected Misstatements for PPS Sampling

Risk of Incorrect Acceptance (%)	Expansion Factor
1	1.90
5	1.60
10	1.50
15	1.40
20	1.30
25	1.25
30	1.20
37	1.15
50	1.10

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Table D-2
Reliability Factors for Misstatements of
Overstatement for PPS Sampling

Number of Overstatement Misstatements	Risk of Incorrect Acceptance				
	1%	5%	10%	15%	20%
0	4.61	3.00	2.31	1.90	1.61
1	6.64	4.75	3.89	3.38	3.00
2	8.41	6.30	5.33	4.72	4.28
3	10.05	7.76	6.69	6.02	5.52
4	11.61	9.16	8.00	7.27	6.73
5	13.11	10.52	9.28	8.50	7.91
6	14.57	11.85	10.54	9.71	9.08
7	16.00	13.15	11.78	10.90	10.24
8	17.41	14.44	13.00	12.08	11.38
9	18.79	15.71	14.21	13.25	12.52
10	20.15	16.97	15.41	14.42	13.66
11	21.49	18.21	16.60	15.57	14.78
12	22.83	19.45	17.79	16.72	15.90
13	24.14	20.67	18.96	17.86	17.02
14	25.45	21.89	20.13	19.00	18.13
15	26.75	23.10	21.30	20.13	19.24
16	28.03	24.31	22.46	21.26	20.34
17	29.31	25.50	23.61	22.39	21.44
18	30.59	26.70	24.76	23.51	22.54
19	31.85	27.88	25.91	24.63	23.64
20	33.11	29.07	27.05	25.74	24.73

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Table D-3
Formulas to Evaluate PPS Sample Results

Description	Formula
Tainting %	Dollar misstatement - Dollar logical unit If logical unit is greater than the sampling interval, use actual misstatement in the logical unit for computing projected misstatement.
Projected Misstatement	Tainting % times Sampling interval
Basic Precision	Reliability factor times Sampling interval
Incremental Allowance for Projected Misstatement	Reliability factor increment minus 1 times projected misstatement
Allowance for Sampling Risk	Basic precision + Incremental allowance for projected misstatement
Upper Limit on Misstatement	Allowance for sampling risk + Projected misstatement

APPENDIX E

Classical Variables Sampling

- Table E-1:** Table of Z Values and Corresponding Confidence Levels
Table E-2: Ratio of Desired Allowance for Sampling Risk to Tolerable Misstatement
Table E-3: Formulas for Three Approaches to Classical Variables Sampling

Table E-1
Table of Z Values and Corresponding Confidence Levels

<u>Z Value</u>	<u>Confidence Level</u>
1.00	68.26
1.038	70.00
1.282	80.00
1.645	90.00
1.96	95.00
2.00	95.44
2.33	98.00
2.5	98.76
2.576	99.00
2.8	99.48

Table E-2
Ratio of Desired Allowance for Sampling Risk to Tolerable Misstatement

Risk of Incorrect Acceptance	Risk of Incorrect Rejection			
	.20	.10	.05	.01
.01	.355	.413	.457	.525
.025	.395	.456	.500	.568
.05	.437	.500	.543	.609
.075	.471	.532	.576	.641
.10	.500	.561	.605	.668
.15	.511	.612	.653	.712
.20	.603	.661	.700	.753
.25	.653	.708	.742	.791
.30	.707	.756	.787	.829
.35	.766	.808	.834	.868
.40	.831	.863	.883	.908
.45	.907	.926	.937	.952
.50	1.000	1.000	1.000	1.000

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Table E-3
Formulas for Three Approaches to
Classical Variables Sampling

Difference Estimation

Average difference between audited and book values in sample	(Number of items in population	=	Estimated difference between book and audited values of the population
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Mean-per-unit Estimation

Average audited value of sample items	(Number of items in population	=	Estimated population value
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Ratio Estimation

Average audited value in sample **		Book value of population	=	Estimated population value
Average book value in sample	(

*** May also be computed as the sum of the audited values divided by the sum of the book values in the sample.*