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APPENDIX A. SIC CODES SURVEYED
NOES 1981-1983

Category	SIC Range
Agriculture	0700-0799
Oil and Gas Extraction	1300-1389
Construction, or Special Trade Contractor	1500-1799
Manufacturing	2000-3999
Transportation, Communications, Electric, Gas, or Sanitary Services	4000-4999
Wholesale Trade	5000-5199
Retail Trade	5200-5999
Specialized Services	7000-8999

APPENDIX B. 98 SAMPLE PSUs
NOES 1981-1983

PSU number	Expected team-weeks*	PSU probability 1 in:	Composition of PSU State	Counties
Self-Representing PSUs				
142	5.49	1.0	NY	Nassau, Suffolk
371	8.22	1.0	WI	Milwaukee, Ozaukee, Washington, Waukesha
381	11.51	1.0	IN KY OH	Dearborn Boone, Campbell, Kenton Brown, Clermont, Hamilton, Warren
392	6.24	1.0	KY MO	Johnson, Wyandotte Cass, Clay, Jackson, Platte, Ray
511	3.79	1.0	MD VA DC	Clavert, Charles, Frederick, Montgomery, Prince George Arlington, Fairfax, Loudoun, Prince William, Cities of: Alexandria, Fairfax, Falls Church, Manassas, Manassas Park Washington
542	5.77	1.0	MD	Anne Arundel, Baltimore, Carroll, Harford, Howard, City of Baltimore
552	4.73	1.0	GA	Butts, Cherokee, Clayton, Cobb, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Paulding, Rockdale, Spaulding, Walton
561	3.60	1.0	FL	Dade, Monroe
731	7.76	1.0	CA	Orange
742	3.19	1.0	CA	San Diego
752	5.64	1.0	CO	Adams, Arapahoe, Boulder, Denver, Douglas, Gilpin, Jefferson
761	4.09	1.0	WA	King, Snohomish

APPENDIX B. 98 SAMPLE PSUs (Cont.)
NOES 1981-1983

PSU number	Expected team-weeks*	PSU probability 1 in:	Composition of PSU State	Counties
Self-Representing PSUs to be interviewed over two years				
110	10.85 13.94	1.0	NJ NY	Bergen Bronx, Kings, New York, Putnam, Queens, Richmond, Rockland, Westchester
120	4.66 5.27	1.0	NJ PA	Burlington, Camden, Gloucester Bucks, Chester, Delaware, Montgomery, Philadelphia
130	6.67 9.38	1.0	MA NH	Barnstable, Dukes, Essex, Middlesex, Nantucket, Norfolk, Plymouth, Suffolk Rockingham
150	4.92 2.95	1.0	NJ	Essex, Hunterdon, Morris, Somerset, Union
160	5.40 9.47	1.0	PA	Allegheny, Beaver, Washington, Westmoreland
310	14.77 13.66	1.0	IL	Cook, Dupage, Kane, Lake, McHenry, Will
320	10.51 15.81	1.0	MI	Lapeer, Livingston, Macomb, Oakland, St. Clair, Wayne
330	5.52 8.23	1.0	IL MO	Clinton, Madison, Monroe, St. Clair Franklin, Jefferson, St. Charles, St. Louis, City of St. Louis
340	3.34 2.11	1.0	MN WI	Anoka, Carver, Chisago, Dakota, Hennepin, Isanti, Ramsey, Scott, Washington, Wright St. Croix
350	6.94 5.46	1.0	OH	Cuyahoga, Geauga, Lake, Medina
520	6.52 5.04	1.0	TX	Collin, Dallas, Denton, Ellis, Hood, Johnson, Kaufman, Parker, Rockwall, Tarrant, Wise

APPENDIX B. 98 SAMPLE PSUs (Cont.)
NOES 1981-1983

PSU number	Expected team-weeks*	PSU probability 1 in:	Composition of PSU State	Counties
530	3.41 4.02	1.0	TX	Brazoria, Chambers, Fort Bend, Harris, Libert, Montgomery, Waller
710	12.95 12.95	1.0	CA	Los Angeles
720	2.46 4.44	1.0	CA	Alameda, Contra Costa, Marin, San Francisco, San Mateo
Non-Self-Representing PSUs				
201	5.78	2.854	NY	Albany, Greene, Montgomery, Rennselaer, Saratoga, Schenectady
202	5.44	1.885	RI	Bristol, Kent, Newport, Providence, Washington
203	5.51	1.201	NY	Erie, Niagara
204	7.29	6.531	CT	New London, Windham
205	2.98	8.046	ME	Hancock, Nennebec, Knox, Lincoln, Waldo, Washington
206	4.74	11.984	PA	Blair
207	2.54	7.375	NY	Cattaraugus, Chautauqua
208	5.26	3.164	PA	Lancaster
209	7.13	1.973	CT	Fairfield
210	3.32	2.017	PA	Lackawanna, Luzerne, Monroe, Wyoming
211	2.49	2.882	NJ	Passaic, Sussex
212	3.85	5.954	NJ	Mercer
213	3.97	5.189	PA	Columbia, Montour, Schuylkill, Sullivan
214	3.66	2.227	NJ	Middlesex
401	7.37	8.879	MI	Genessee, Shiawassee

APPENDIX B. 98 SAMPLE PSUs (Cont.)
NOES 1981-1983

PSU number	Expected team-weeks*	PSU probability 1 in:	Composition of PSU State	Counties
402	9.61	2.073	IN	Boone, Hamilton, Hancock, Hendricks, Johnson, Marion, Morgan, Shelby
403	2.53	2.872	IA NE	Pottawattamie Douglas, Sarpy
404	2.51	13.305	MN	Benton, Sherburne, Stearns
405	3.25	7.077	WI	Brown
406	2.30	16.050	KS	Douglas, Franklin, Leavenworth, Miami
407	2.34	8.835	OH	Guernsey, Harrison, Tuscarawas
408	5.05	1.787	OH	Delaware, Fairfield, Franklin, Madison, Pickaway
409	4.61	2.739	MI OH	Monroe Fulton, Lucas, Ottawa, Wood
410	5.84	3.762	IN	Adams, Allen, DeKalb, Wells, Whitley
411	2.49	13.362	MO	Audrain, Boone, Callaway, Howard, Randolph
412	1.74	16.814	KS MO	Allen, Anderson, Bourbon, Coffey, Linn, Woodson Barton, Bates, Henry, St. Clair, Vernon
413	3.89	8.535	WI	Racine
414	6.14	16.327	OH	Knox, Marion, Morrow
415	5.18	11.979	MI	Hillsdale, Lenawee
416	2.62	7.908	IN OH	Lagrange, Steuben Defiance, Henry, Paulding, Williams
417	5.22	16.355	IN	Dubois, Knox, Pike, Spencer
418	8.84	2.768	OH	Portage, Summit

APPENDIX B. 98 SAMPLE PSUs (Cont.)
NOES 1981-1983

PSU number	Expected team-weeks*	PSU probability 1 in:	Composition of PSU	
			State	Counties
601	1.78	11.849	TX	Bee, Brooks, Dimmit, Duval, Frio, Goliad, Jim Hogg, Jim Wells, Karnes, Kennedy, Kinney, Kleberg, LaSalle, Live Oak, Maverick, McMullen, Starr, Uvalde, Willacy, Zapata, Zavala
602	1.99	2.507	FL	Broward
603	7.24	1.418	LA	Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. Tammany
604	2.26	16.870	TX	Atascosa, Bandera, Blanco, Bosque, Burnet, Caldwell, Comanche, Erath, Gonzales, Hamilton, Kerr, Medina, Mills, San Saba, Somervell, Wilson
605	2.11	13.643	TX	Austin, Bastrop, Colorado, Fayette, Jackson, Lavaca, Lee, Matagorda, Wharton
606	2.55	4.856	MS	Hinds, Madison, Rankin
607	1.67	9.920	TX	Clay, Montague, Wichita
608	2.75	1.196	FL	Hillsborough, Pasco, Pinellas
609	3.80	1.993	AR MS TN	Crittenden DeSoto Shelby, Tipton
610	7.96	2.052	OK	Creek, Mayes, Osage, Rogers, Tulsa, Wagoner
611	4.58	7.073	AL	Autauga, Elmore, Montgomery
612	4.70	4.703	SC	Lexington, Richland
613	2.57	3.564	AK	Pulaski, Saline
614	4.59	3.621	DE MD NJ	New Castle Cecil Salem

APPENDIX B. 98 SAMPLE PSUs (Cont.)
NOES 1981-1983

PSU number	Expected team-weeks*	PSU probability 1 in:	Composition of PSU	
			State	Counties
615	4.99	17.158	VA	Dinwiddie, Prince George, Cities of: Colonial Heights, Hopewell, Petersburg
616	7.24	15.921	AL	Choctaw, Clarke, Conecuh, Monroe, Washington
617	3.95	20.721	SC	Clarendon, Georgetown, Williamsburg
618	4.03	12.059	NC	Johnson, Wilson
619	3.82	18.318	KY	Bath, Elliot, Fleming, Johnson, Laurence, Lewis, Magoffin, Martin, Mason, Menifee, Montgomery, Morgan, Nicholas, Robertson, Rowan, Wolfe
620	5.73	2.292	SC	Greenville, Pickens, Spartanburg
621	3.01	14.522	MD	Somerset, Wicomico, Worcester
622	5.33	1.920	NC	Davidson, Davie, Forsyth, Guilford, Randolph, Stokes, Yadkin
623	2.77	3.461	GA TN	Catoosa, Dade, Walker Hamilton, Marion, Sequatchie
624	4.39	9.234	AL	Calhoun, Etowah
625	4.52	21.775	VA	Bedford, Franklin, Rockbridge, Cities of: Bedford, Buena Vista, Lexington
626	3.73	10.201	OH WV	Washington Wirt, Wood
627	5.96	12.052	NC	Caswell, Granville, Person, Rockingham
628	5.50	21.284	MS	Clay, Lowndes, Webster

APPENDIX B. 98 SAMPLE PSUs (Cont.)
NOES 1981-1983

PSU number	Expected team-weeks*	PSU probability 1 in:	Composition of PSU	
			State	Counties
629	2.90	14.542	GA	Dawson, Fannin, Gilmer, Habersham, Lumpkin, Murray, Pickens, Rabun, Towns, Union
630	4.59	16.618	TN	DeKalb, Putnam, White
631	4.46	18.029	KY	Anderson, Bracken, Carroll, Franklin, Gallatin, Grant, Harrison, Henry, Owen, Pendleton, Shelby, Spencer, Trimble
801	2.29	2.969	CA	Placer, Sacramento, Yolo
802	1.83	7.163	CA	Kern
803	1.41	28.990	AK	Divisions of: Upper Yukon, Fairbanks, South East Fairbanks
804	2.68	5.363	NV	Clark
805	3.89	2.177	CA	Riverside, San Bernadino
806	2.39	4.933	CA	Fresno
807	5.17	1.871	OR	Clackamas, Multnomah, Washington, Yamhill
			WA	Clark
808	2.74	6.501	CO	El Paso, Pueblo, Teller
809	8.07	1.170	CA	Santa Clara

* Expected time to complete the sample of firms with less than 2,500 employees located in the sample PSU plus time to complete sample of larger firms located in or near the sample PSU.

APPENDIX C. COVERAGE OF DMI AND CBP FILES USED TO PROVIDE DETAILED INFORMATION ON SAMPLE ESTABLISHMENTS NOES 1981-1983

The adequacy of the DMI file was examined by comparing the total number of employees reported for target firms listed on DMI with corresponding totals from the CBP (5). Several problems occurred in comparing CBP and DMI tabulations:

1. The two files did not refer to the same time periods; CBP tabulations were for 1977 with establishment size classes in most cases based on the number of employees reported as of mid-March 1977. The DMI file was labeled "1980" with number of employees as carried on the most recent DMI record.

2. Establishments in scope for the study were confined to firms with eight or more employees. However, the CBP tabulations did not provide counts for the necessary establishment size classes so that approximations were required.

3. SIC coding for establishments was probably not consistent for the two files. For this reason, comparisons were made initially at the 2-digit SIC levels. Where serious differences appeared at the 2-digit level, the examination progressed to 3- and 4-digit levels. This assumed coding inconsistencies would be more evident at the detailed SIC levels.

4. CBP files exclude government employees, self-employed persons, farm workers, employees under the Railroad Retirement Act, and domestic service workers. About 24 percent of the total paid civilian wage and salary employment did not appear in the CBP tabulations. The absence of the self-employed was not considered a problem as they were assumed to be concentrated among firms too small to be in scope. The absence of the other categories may have accounted for some of the observed differences for the target SIC's.

The extent of coverage of government workers in DMI was not clear although a few government installations were found on the DMI universe lists. In some situations, the DMI file was evaluated using counts of employees on non-agricultural payrolls by industry as given in their Statements of Employment and Earnings (15); these figures referred to essentially the same group of employees as the CBP except that civilian government workers were included.

One criterion for the sampling design was that establishments from a file covering 90 percent or more of the target universe would be adequate for the study purposes. For establishment groups that did not meet this criterion, supplementing the DMI was considered. Supplementation would not be considered, however, unless the under-represented group of establishments comprised a workforce of at least 0.5 percent or so of the total 29,000,000 employees in all target establishments.

Comparisons of the DMI and CBP files indicated under-representation of the following SIC groups in the DMI (see also Chapter IV):

- 451 & 452 - Air transportation.
- 481 - Telephone communication.

- 491 - Electronic services.
- 493 - Combination electric, gas and other services combined.
- 5541 - Gasoline service stations.
- 7231 - Beauty shops.
- 7241 - Barber shops.
- 7299 - Miscellaneous personal services.

Supplementing the coverage of establishments in these SIC groups was considered using a second commercial list, the National Business List (NBL). However, the NBL could not provide the number of employees for each establishment and this information would have had to be obtained by telephone interview with each establishment selected.

In the case of gasoline service station attendants, for example, the NBL could have supplied a list of about 126,000 service stations that were not supposed to be on the DMI. The sample from this additional source would have been about 790 cases which would have had to be contacted by phone to screen out those with less than 8 employees; an expected 74 of these would have 8 or more employees and therefore be in scope (assuming all were still in business). The cost of adding the 74 additional cases to the sample would have been roughly $35 per case not counting the cost of telephone screening of the 790 units and the field interview cost of the 74 units. This sample supplement would also have to be matched against the DMI universe listing to remove any establishments already having a chance of selection, and selection probabilities for those added establishments would have to be found. Matching the NBL and DMI lists would also have had to be done before adding beauty shops, barber shops, or establishments performing miscellaneous personal services to the sample.

Since the NBL was constructed from essentially the same sources as the DMI, supplementing the remaining SIC groups (451, 452, 481, 491, 493) was not expected to be of much help in improved coverage. Further supplementation could also have been obtained by performing a search for firms appearing in phone directory yellow pages for the localities in the sample PSU's, but this project was considered beyond available resources. For these reasons, the coverage provided by the DMI was accepted without supplementation.

Oversampling establishments with employees in particularly hazardous occupations was also considered (e.g., construction). If a subset of establishments could have been identified as having higher rates of hazard exposures than other establishments, more reliable estimates for hazard exposures could have been obtained. If a subset of 10% of all establishments could have been identified as having exposure nine times as great as other remaining establishments, for example, it would be possible to reduce the sampling error for establishments exposed to that particular hazard by as much as 10 percent. This approach could not be adopted, however, because of problems in identifying high hazard exposure establishments, and the fact that oversampling for one characteristic might be a disadvantage when other characteristics were investigated.

APPENDIX D. DERIVATION OF SAMPLE SIZE FORMULAS NOES 1981-1983

Notation

The following notation is used:

Let N_a = the total number of establishments in the U.S. in all target industries in the a^{th} employee size class.

n_a = the number of establishments selected with equal probability from N_a.

C_a = the average cost (in person-hours) to investigate a sample establishment in the a^{th} employee-size category.

$C = \sum_a n_a C_a$ the cost of investigating the $n = \sum_a n_a$ sample establishments in terms of person-hours.

$\bar{y}'_a$ = the estimated average value of the y characteristic per establishment in the a^{th} size class based on the sample of n_a facilities in that class.

$y' = \sum_a N_a \bar{y}'_a$

$S^2(\bar{y}_a)$ = the estimated population variance of y'_a.

$= k(y'_a)^2$ (assumed)

$\sigma^2(y') = \sum_a N_a^2 (1/n_a - 1/N_a) S^2(\bar{y}_a)$

= the variance of the estimated total y'.

The optimum design for a sample may be determined using either the Cauchy Inequality or LaGrange Multipliers. Two basic quantities, C (total cost), and $\sigma^2(y)$ (variance of estimated characteristic) must be defined. Using the Cauchy Inequality, optimal sample size n_a in stratum 'a' with total number of numbers N_a at fixed cost C is found as the solution to the equation:

$$[\sigma^2(y')]^2 [\sqrt{C}]^2 = (\sigma^2(y'))(C)$$

or, substituting,

$$(\sum_a S_a^2(\bar{y}')/n_a)(\sum_a C_a n_a) = \sum_a (S_a^2(y')/n_a)(C)$$

The result is:

$$n_a = [N_a S(\bar{y}_a)/\sqrt{C_a}][(C_a)/\sqrt{C_a} N_a S(\bar{y}_a)]$$

LaGrange Multipliers may also be used. In this method, the variance function is constructed from the variance of the mean and variable cost determined by the LaGrange multiplier:

$$\phi = \sigma^2(y') + \lambda C$$

$$\phi = \sigma^2(y') + \lambda (a n_a c_a - C)$$

Partial derivatives of ϕ with respect to n_a are taken, the partial derivatives are set to ϕ, and the resulting simultaneous equations are solved for σ^2 and then for n_a.

For details on use of Cauchy's Inequality see Kish (14). See Hansen (9) for details on the LaGrange method.

APPENDIX E. DERIVATION OF FORMULA FOR A SELF-WEIGHTING SAMPLE NOES 1981-1983

To determine an expression defining a self-weighting sample first consider the overall probability of selecting a specific establishment. This probability is equal to (the probability of selecting the PSU containing the establishment) times (the probability of selecting the establishment from that PSU).

First define the following parameters:

M_{hj} = The total number of establishments for the survey in the j^{th} PSU and h^{th} stratum, i.e., $\sum_a N_{hja} f_a$, the measure of size of the j^{th} PSU in the h^{th} stratum.

M_h = The total number of establishments in the h^{th} stratum, i.e., $\sum_j M_{hj}$, the measure of size of all PSUs in the h^{th} stratum.

N_{hja} = The number of establishments in the U.S. in the a^{th} employee size class (according to CBP) in the hj^{th} PSU.

f_a = The oversampling ratio for establishments in the a^{th} size class (see below).

k = Sampling interval, $1/(n_a/N_a)$.

The probability of the PSU being selected in the J^{th} PSU and h^{th} stratum is M_{hj}/M_h. To obtain a self-weighting sample, establishments in the h, j^{th} PSU should be selected with a rate r_{hj} such that the sampling rate for establishments is proportional to the probability of the PSU being selected, or such that:

$$1/k = \left(M_{hj}/M_h\right) \times r_{hj}, \qquad (1)$$

where 1/k is the sampling fraction desired. From this,

$$r_{hj} = \left(M_h/M_{hj}\right) \times 1/k \qquad (2)$$

Substituting (2) into (1), a self-weighting sample may be defined by the condition:

$$1/k = \left(M_{hj}/M_h\right) \times \left(M_h/M_{hj} \times 1/k\right).$$

APPENDIX F. TELEPHONE SAMPLE WEIGHTS FOR ESTABLISHMENTS IN PSUs HAVING SIZE CLASSES SAMPLED WITH CERTAINTY NOES 1981-1983

PSU	SIZE CLASS					
	3	4	5	6	7	8
204				14.928	14.928	14.928
205				18.391	18.391	18.391
206			23.968	23.968	23.968	23.968
207				16.857	16.857	16.857
212				13.609	13.609	13.609
213					10.378	10.378
401			20.295	20.295	20.295	20.295
404			26.61	26.61	26.61	26.61
405				16.176	16.176	16.176
406		32.1	32.1	32.1	32.1	32.1
407			20.194	20.194	20.194	20.194
410						8.599
411			30.542	30.542	30.542	30.542
412		38.432	38.432	38.432	38.432	38.432
413			19.508	19.508	19.508	19.508
414		32.654	32.654	32.654	32.654	32.654
415			27.38	27.38	27.38	27.38
416				18.075	18.075	18.075
417		37.383	37.383	37.383	37.383	37.383
601			23.698	23.698	23.698	23.698
604		38.56	38.56	38.56	38.56	38.56
605			27.286	27.286	27.286	27.286
606					11.099	11.099
607			19.84	19.84	19.84	19.84
611				14.146	14.146	14.146
612					10.75	10.75
613						8.146
614						8.277
615		39.218	39.218	39.218	39.218	39.218
616		36.391	36.391	36.391	36.391	36.391
617		41.442	41.442	41.442	41.442	41.442
618			24.118	24.118	24.118	24.118
619		36.636	36.636	36.636	36.636	36.636
621			33.193	33.193	33.193	33.193
623						7.911
624			21.106	21.106	21.106	21.106
625		49.771	49.771	49.771	49.771	49.771
626			20.402	20.402	20.402	20.402
627			27.547	27.547	27.547	27.547
628		42.568	42.568	42.568	42.568	42.568
629			33.239	33.239	33.239	33.239
630		33.236	33.236	33.236	33.236	33.236
631		36.058	36.058	36.058	36.058	36.058
802				16.372	16.372	16.372
803	57.98	57.98	57.98	57.98	57.98	57.98
804					10.726	10.726
806					9.866	9.866
808				13.002	13.002	13.002

APPENDIX G. ORDER OF COMBINING SELF-REPRESENTING PSUs FOR FIRST STAGE RATIO ESTIMATION AND FOR VARIANCE ESTIMATION NOES 1981-1983

Pair number	PSU
1	110
2	150
3	120
4	142
5	130
6	160*
7	552*
8	542
9	381*
10	350
11	320*
12	371
13	310* #
14	520*
15	330
16	752*
17	392*
18	340*
19	720*
20	761*
21	530*
22	511
23	561*
24	742*
25	731*
26	710*
27	999* &
28	999* &

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* Workload subsamples ABCD interviewed in the PSU (workload subsamples ABC in all other PSUs).

\# Within PSU selection probabilities differ from other PSUs, see text and Appendix D.

& Pairs 27 and 28 refer to size classes 9 and 10, respectively.

APPENDIX H. ORDER OF COMBINING NON-SELF-REPRESENTING PSUs FOR FIRST STAGE RATIO ESTIMATION AND FOR VARIANCE ESTIMATION NOES 1981-1983

Pair number	PSUs in pair: First member	PSUs in pair: Second member
29	601*	602*
30	801*	802
31	401	803*
32	804*	603*
33	604	605*
34	606	607*
35	805*	806*
36	402*	403
37	404*	608*
38	609	610
39	611*	807*
40	808*	405
41	201	202
42	612	613
43	406*	614
44	615	616
45	203	204
46	617*	618*
47	205	206*
48	619*	620
49	207	208*
50	209	210*
51	407	408*
52	409	410
53	411	621
54	622*	623
55	624	809*
56	211	625
57	412	212
58	413	626*
59	414*	213*
60	627	628*
61	415	416
62	629	630*
63	417	631*
64	214	418*

* Workload subsamples ABCD assigned in the PSU (workload subsamples ABC in all other PSUs).

APPENDIX I. ORDER FOR COMBINING 2-DIGIT SIC SUMMARIES TO SECOND STAGE OF RATIO ESTIMATION NOES 1981-1983

GROUP A: Establishments reporting 10-999 employees in the following SICs:

Order	SIC	Order	SIC
1	15[D]	21	36
2	16	22	37
3	17	23	38
4	20	24	39
5	21	25	41 (411, 412, 415, 417)
6	22	26	44
7	23	27	45
8	24	28	46[D]
9	25	29	48
10	26	30	49
11	27	31	50[D,L] (501, 503, 505, 5093)
12	28	32	51[D,L] (516, 517)
13	29	33	55 (552, 553, 554)
14	13	34	72[D] (not including 7218)
15	30	35	73[D,L] (733, 734, 7391, 7395, 7397, 7399)
16	31	36	75[D] (not including 752)
17	32	37	76
18	33	38	84
19	34		
20	35		

GROUP B: Establishments reporting 1,000 or more employees in SICs listed in group A.

Establishments reporting 1,000 or more employees in SICs 50, 51, 73 were assigned to Group C.

D CBP employee counts for one or more size classes will show "Disclosure".

L CBP count of large establishments (more than 1,000 employees) cannot be determined for the 2-digit SIC; Group C ratio procedure used for large firms.

APPENDIX I. ORDER FOR COMBINING 2-DIGIT SIC SUMMARIES TO SECOND STAGE OF RATIO ESTIMATION (CONT.) NOES 1981-1983

GROUP C: Establishments reporting 8 or 9 employees in any of the SICs enumerated in Groups A and B plus all establishments reporting 8 or more employees in the following SICs:

0723	422
0724	423
0742	4742
0782	478
0783	8062
4013	807
4212	809
4214	

Establishments reporting 1,000 or more employees in SICs 50, 51, 73.

APPENDIX J. RANDOM NUMBER TABLE USED TO DEFINE REPLICATES FOR VARIANCE ESTIMATION* NOES 1981-1983

REPLICATE	PAIR NUMBER 1				2				3				4				5				6	
	1234	5678	9012	3456	7890	1234	5678	9012	3456	7890	1234	5678	9012	3456	7890	1234	5678	9012	3456	7890	1234	
1	0000	1010	1110	1100	0111	1100	1101	0010	0000	1010	1110	1100	0111	1100	1101	0010						
2	1000	0101	0111	0110	0011	1110	0110	1000	1000	0101	0111	0110	0011	1110	0110	1000						
3	0100	0010	1011	1011	0001	1111	0011	0100	0100	0010	1011	1011	0001	1111	0011	0100						
4	0010	0001	0101	1101	1000	1111	1001	1010	0010	0001	0101	1101	1000	1111	1001	1010						
5	1001	0000	1010	1110	1100	0111	1100	1100	1001	0000	1010	1110	1100	0111	1100	1100						
6	0100	1000	0101	0111	0110	0011	1110	0110	0100	1000	0101	0111	0110	0011	1110	0110						
7	1010	0100	0010	1011	1011	0001	1111	0010	1010	0100	0010	1011	1011	0001	1111	0010						
8	1101	0010	0001	0101	1101	1000	1111	1000	1101	0010	0001	0101	1101	1000	1111	1000						
9	0110	1001	0000	1010	1110	1100	0111	1100	0110	1001	0000	1010	1110	1100	0111	1100						
10	0011	0100	1000	0101	0111	0110	0011	1110	0011	0100	1000	0101	0111	0110	0011	1110						
11	1001	1010	0100	0010	1011	1011	0001	1110	1001	1010	0100	0010	1011	1011	0001	1110						
12	1100	1101	0010	0001	0101	1101	1000	1110	1100	1101	0010	0001	0101	1101	1000	1110						
13	1110	0110	1001	0000	1010	1110	1100	0110	1110	0110	1001	0000	1010	1110	1100	0110						
14	1111	0011	0100	1000	0101	0111	0110	0010	1111	0011	0100	1000	0101	0111	0110	0010						
15	1111	1001	1101	0100	0010	1011	1011	0000	1111	1001	1101	0100	0010	1011	1011	0000						
16	0111	1100	1110	1010	0001	0101	1101	1000	0111	1100	1110	1010	0001	0101	1101	1000						
17	0011	1110	0111	0101	0000	1010	1110	1100	0011	1110	0111	0101	0000	1010	1110	1100						
18	0001	1111	0011	1010	1000	0101	0111	0110	0001	1111	0011	1010	1000	0101	0111	0110						
19	1000	1111	1001	1101	0100	0010	1011	1010	1000	1111	1001	1101	0100	0010	1011	1010						
20	1100	0111	1100	1110	1010	0001	0101	1100	1100	0111	1100	1110	1010	0001	0101	1100						
21	0110	0011	1110	0111	0101	0000	1010	1110	0110	0011	1110	0111	0101	0000	1010	1110						
22	1011	0001	1111	0011	1010	1000	0101	0110	1011	0001	1111	0011	1010	1000	0101	0110						
23	1101	1000	1111	1001	1101	0100	0010	1010	1101	1000	1111	1001	1101	0100	0010	1010						
24	1110	1100	0111	1100	1110	1010	0001	0100	1110	1100	0111	1100	1110	1010	0001	0100						
25	0111	0110	0011	1110	0111	0101	0000	1010	0111	0110	0011	1110	0111	0101	0000	1010						
26	1011	1011	0001	1111	0011	1010	1000	0100	1011	1011	0001	1111	0011	1010	1000	0100						
27	0101	1101	1000	1111	1001	1101	0100	0010	0101	1101	1000	1111	1001	1101	0100	0010						
28	1010	1110	1100	0111	1100	1110	1010	0000	1010	1110	1100	0111	1100	1110	1010	0000						
29	0101	0111	0110	0011	1110	0111	0101	0000	0101	0111	0110	0011	1110	0111	0101	0000						
30	0010	1011	1011	0001	1111	0011	1010	1000	0010	1011	1011	0001	1111	0011	1010	1000						
31	0001	0101	1101	1000	1111	1001	1101	0100	0001	0101	1101	1000	1111	1001	1101	0100						
32	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000						

* Entries are 0 or 1, depending on whether to include the second or first member, respectively, of each pair in the replicate.

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