

## Trends in Item Non-Response in the PSID, 1968-2009

Alexandra Killewald, Patricia Andreski Robert Schoeni  
Survey Research Center, Institute for Social Research  
University of Michigan

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## **Trends in Item Non-Response in the PSID, 1968-2009**

Alexandra Achen  
Patti Andreski  
Robert F. Schoeni

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### **Introduction**

This manuscript reports trends in item non-response rates for a variety of core questions in Panel Study of Income Dynamics (PSID) that have been asked frequently since PSID began in 1968. In general, the results are encouraging. For most items, we see no clear trend toward increasing rates of item non-response. However, a few exceptions are observed, most notably occupation, health, and wage and salary earnings, although only the last has reached an item non-response rate of more than 2%. We also observe that several items see a spike in non-response in 1993, which is the year in which the PSID transitioned to computer-assisted data collection methods, but in general rates returned to pre-1993 levels quickly.

It is worth noting that item non-response rates are computed in two different ways. For some items, the item has a code (most frequently 998 or 999) to indicate that the respondent did not answer. However, for other items responses have been imputed for missing data. In these cases, we use a separate variable, the accuracy code for the item of interest, which indicates whether the value was imputed. Although these methods are not strictly comparable, in general we do not see any sudden changes in non-response rates when an item switches from one format to another. Appendix 1 provides information about whether missing values were imputed or not, as well as other information about data availability for the items and decision rules for generating the item non-response rates. Table A1 lists the names of the variables used.

## **Labor Hours and Income**

Heads and wives who were employed in the previous year are asked to report their average weekly hours at their main job. Figure 1 reports the non-response rate for this item. The non-response rate for this item falls during the 1970's and then remains fairly constant, usually between 1% and 2%, in subsequent years. While there are some fluctuations in the 1980's and 1990's, no consistent trend emerges. By contrast, as shown in Figure 2, the non-response rates for the total labor income of heads and wives is roughly constant during the 1970's, and then begins a steady increase that lasts until the present. Non-response rates for this item were about 2% for both heads and wives in 1980, but over 6% in 2001 and 2003. The labor income questions also show a spike in non-response in 1993 during the transition to computer-assisted data collection methods, and then a return to rates that are consistent with the trend that was observed prior to 1993.

## **Industry, Occupation, and Union Status**

Item non-response rates for the industry of heads' and wives' main jobs has never been more than about 3%, but, if anything, it appears to have decreased somewhat in the years following 1981, fluctuating roughly between 0.5% and 1.5% in the 1980's and 1990's, and decreasing steadily since 2003. These results are shown in Figure 3. Figure 4, however, which shows the occupation of heads' and wives' main jobs, does reveal a trend of increasing non-response, beginning in the early 1990's. Despite this, the overall item non-response level remains low – only about 1.5% in 2003.

Employed heads and wives are asked whether the individual's main job is covered by a union contract. The non-response rates for this item are shown in Figure 5. Non-response rates were generally less than 1% in the 1970's to early 1980's, with a sharp increase in the mid-

1980's to about 4%. In the early 1990's the rate fell again to its previous level of less than 1%, but increased again in the 2001 and 2003 waves, to return to about a 3.5% non-response rate. Unfortunately, no changes in question design or coding method shed insight on the reasons for these fluctuations. There is also no explanation for the anomalously high non-response rate for wives in 1984 (almost 6%), while the non-response rate for heads remains less than 1%. The non-response rate for wives returns to a level similar to that of heads in 1985, at about 1%.

### **ADC/AFDC/TANF Receipt**

Only respondents who indicated that they received a welfare payment (from ADC, AFDC, or TANF) in the last year are asked the amount of that payment. Among these respondents, Figure 6 shows no obvious trend in item non-response; non-response rates generally fluctuate between 1% and 3% throughout the period in question. Beginning in 1986, welfare payments received by heads and wives are asked about separately, and it is easy to observe that there is more noise associated with the non-response rate for wives. This is accounted for by the fact that wives or "wives" in the PSID are only women who are either married or in long-term cohabitations. As a result, very few members of this group receive welfare payments, and so small changes in the numerator change the non-response rate substantially.

### **Health and Housework**

Questions about the health status of heads and wives have been asked since 1984. Non-response rates for these items may be drifting slightly upward, but the highest non-response rate to date (achieved in 2001) was still only about 1%. Results are shown in Figure 7. The health item also shows a local peak in 1993, during the transition to computer-assisted methods. Figure 8 shows trends in non-response to questions about hours of housework by family members. Questions about the amount of housework done by the household member with primary

responsibility for housework are asked in 1970-1974, and have item non-response rates of about 2%. Beginning in 1976, the housework hours of heads and wives were asked about separately. Non-response rates have generally been around 1%. However, there is an increase in non-response for the housework questions at the implementation of computer-assisted data collection in 1993, and then a gradual return to previous levels. The large spike in non-response occurring for wives in 1999 has been identified as a coding error in the processing of raw data.

### **Dwelling Unit and Food Spending**

Despite the appearance of Figure 9, non-response rates for dwelling unit type have been fairly consistent and quite low, never exceeding 0.7%, and achieving 0% in 2001 and 2003. The item non-response rate for the question that asks about total spending on food consumed in the home is shown in Figure 10. The non-response rate is high in 1968-1972 years, exceeding 10% in several cases. After a hiatus in 1973, the question was reinstated in 1974, and non-response rates have been consistently around 2% since then. Beginning in 1994, individuals who received food stamps and those who did not were asked separate items, but it is notable that, not only do these two groups have similar non-response rates, but no obvious change in the non-response rate occurred with the introduction of this change.

Figure 1. Non-Response Rate for Hours at Main Job (All Jobs in 2009)

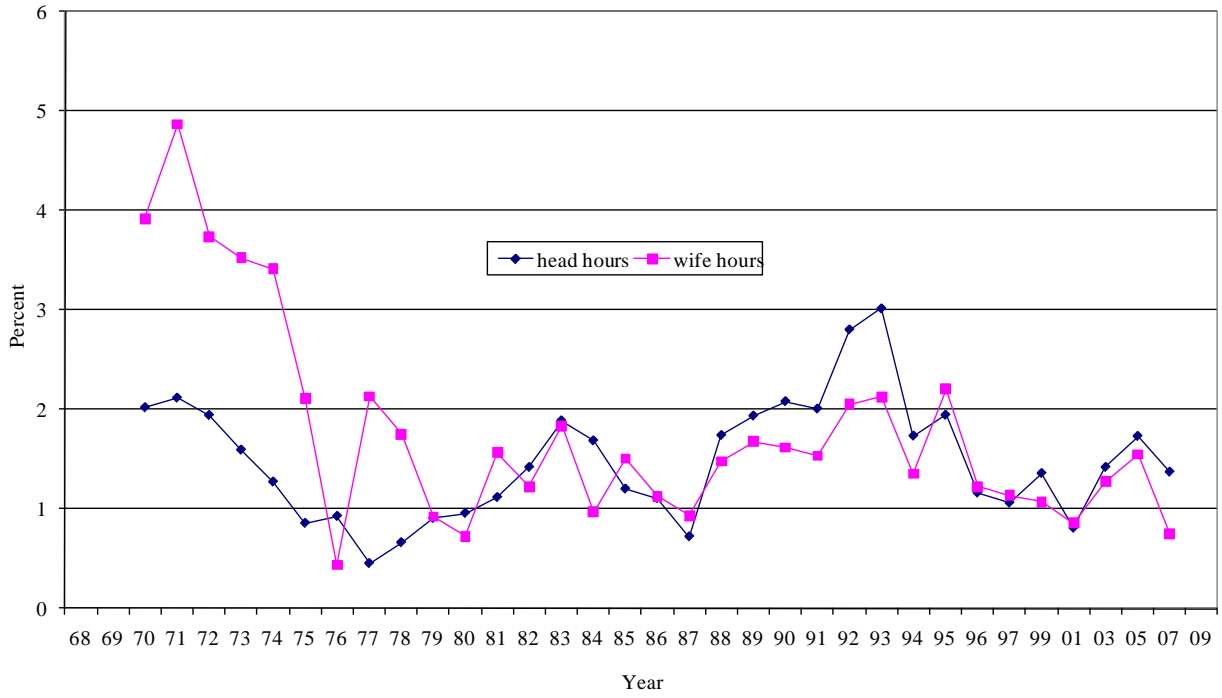


Figure 2. Non-Response Rate for Wages

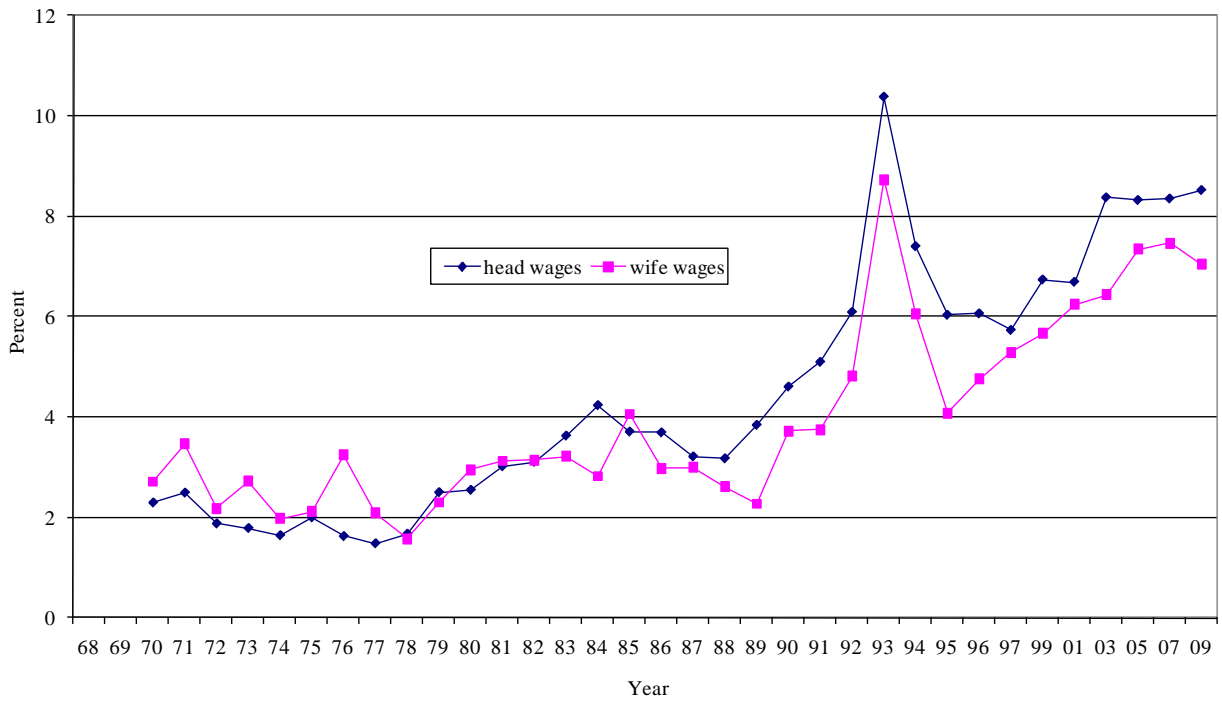


Figure 3. Non-Response Rate for Industry

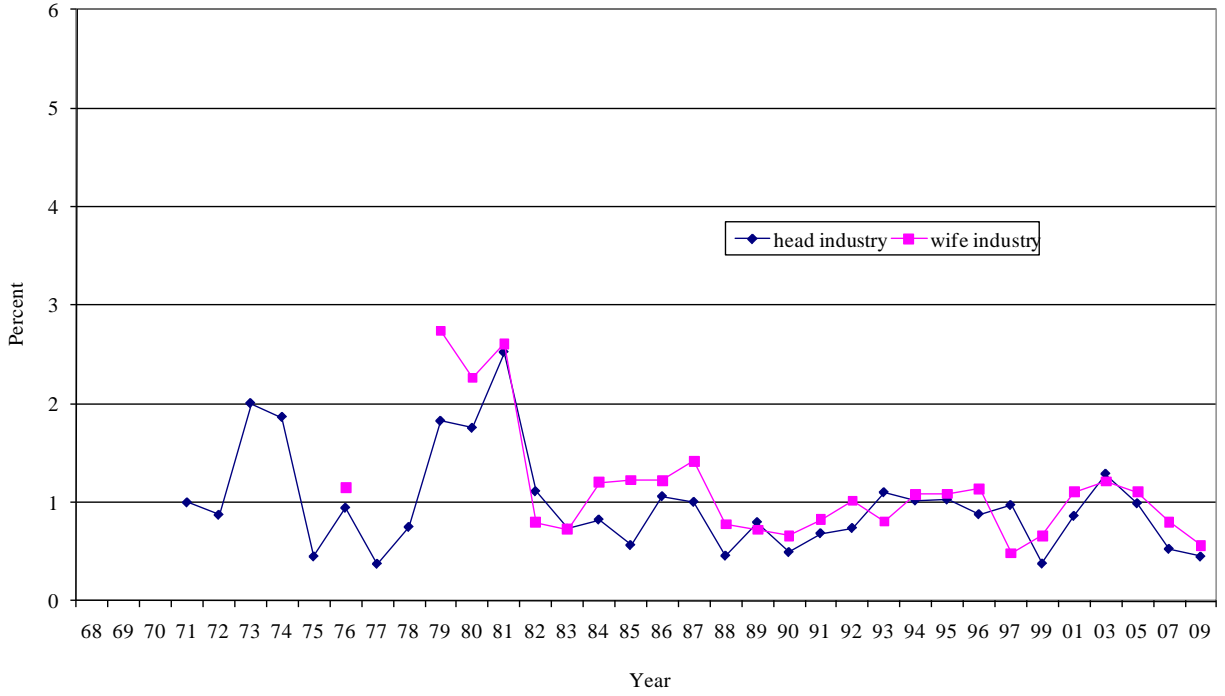


Figure 4. Non-Response Rate for Occupation

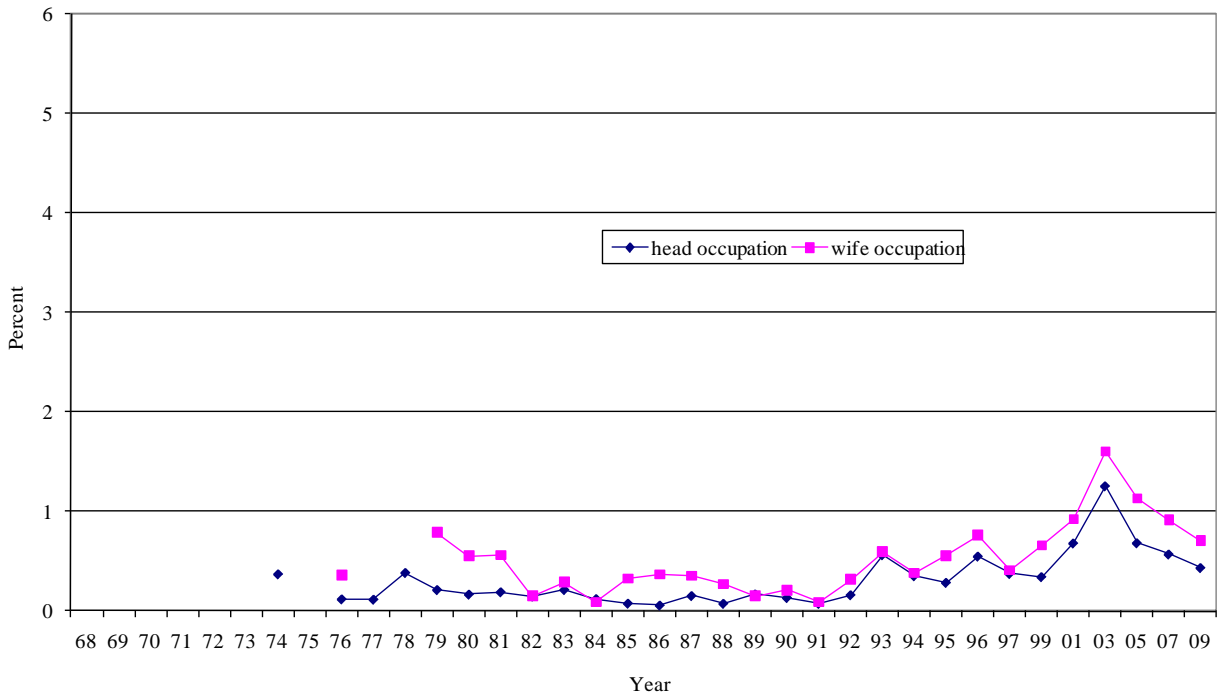


Figure 5. Non-Response Rate for Whether Current Job is Covered by a Union Contract

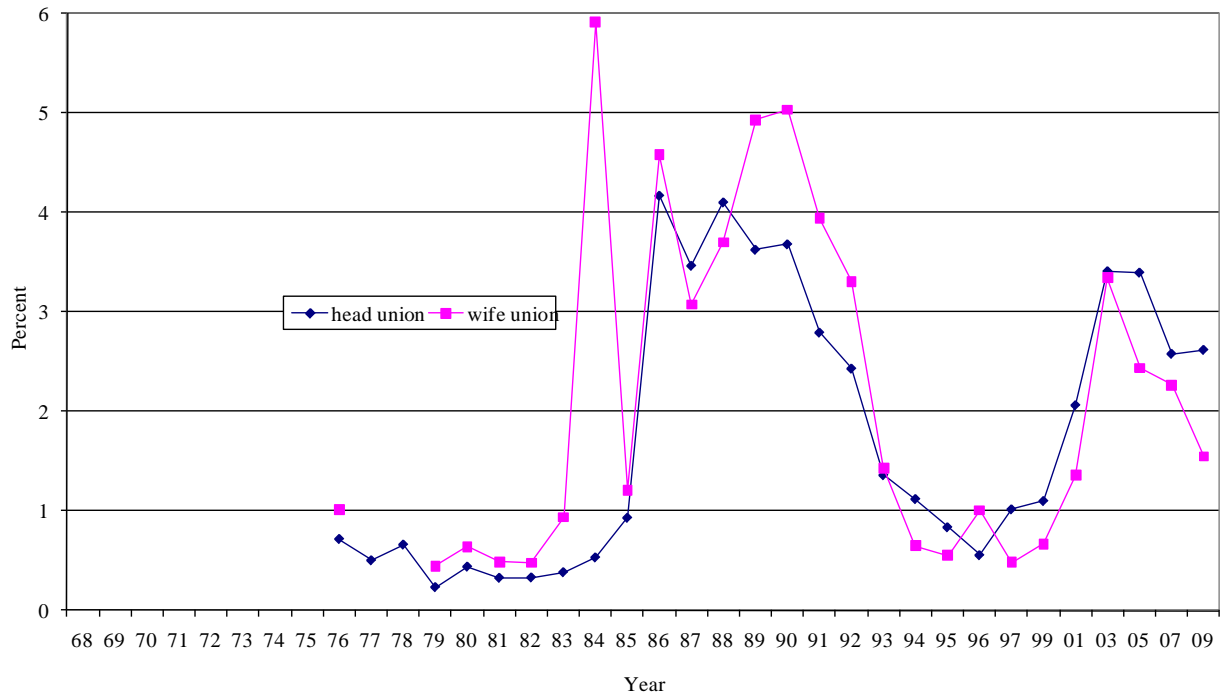


Figure 6. Non-Response Rate for Amount of ADC/AFDC/TANF

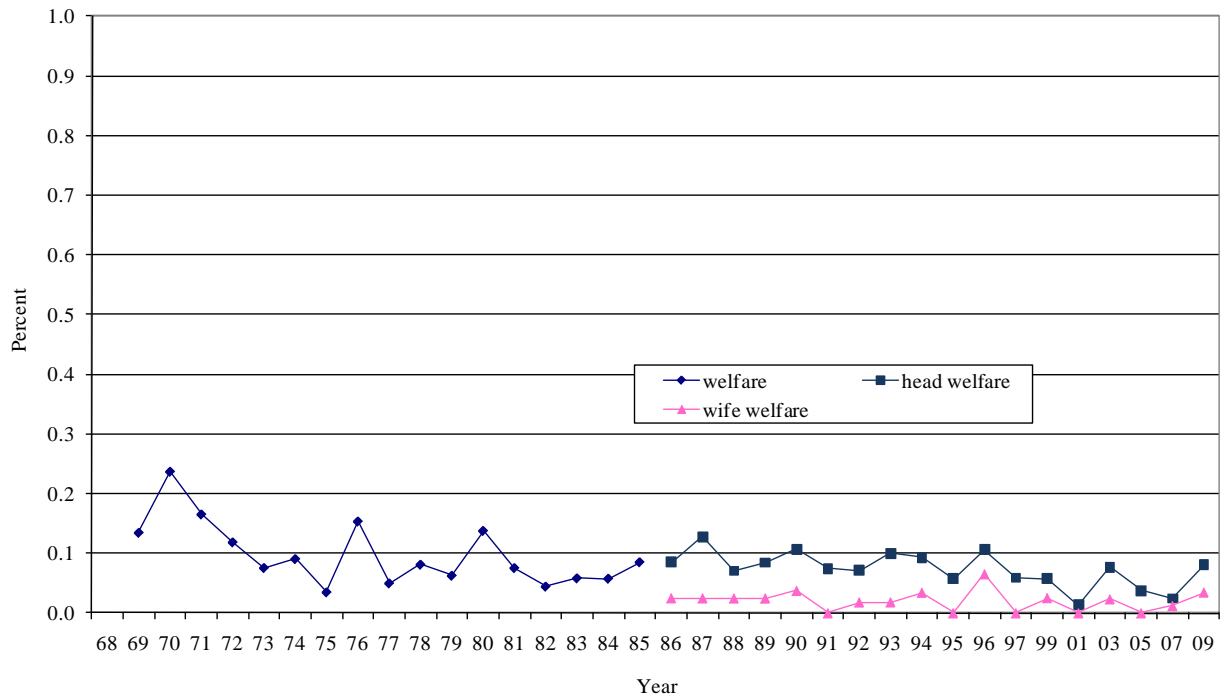




Figure 7. Non-Response Rate for Amount of ADC/AFDC/TANF if Amount Received>0

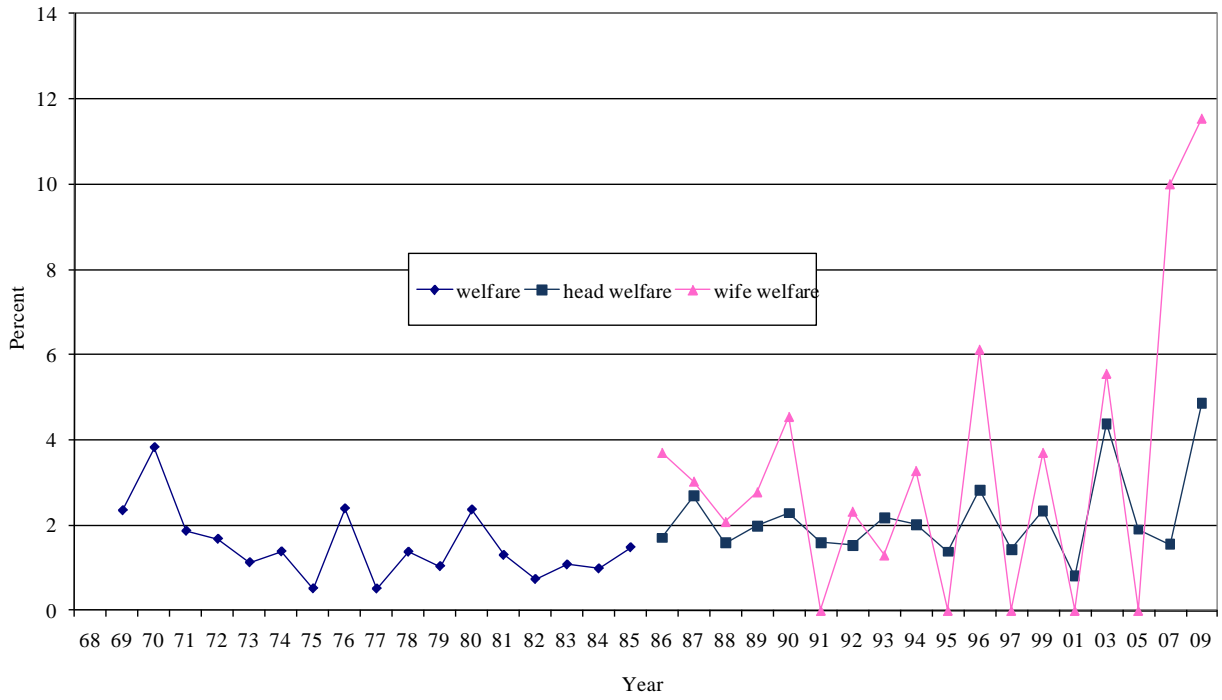


Figure 8. Non-Response Rate for Health Status

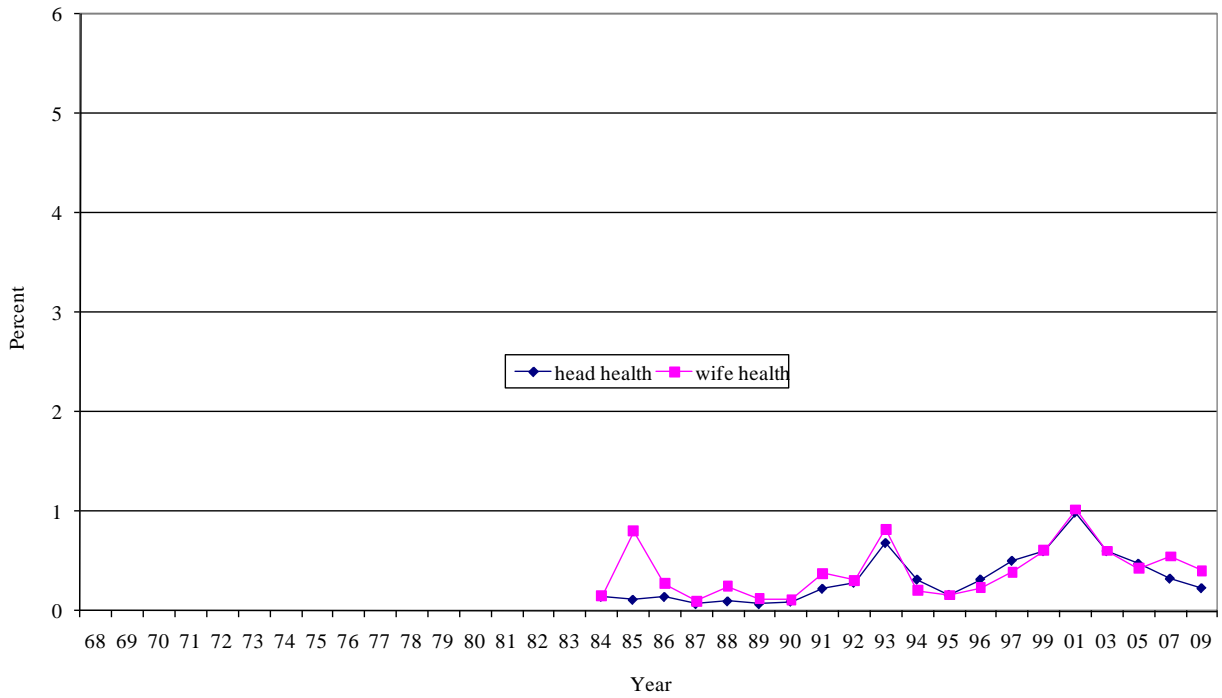


Figure 9. Non-Response Rate for Housework

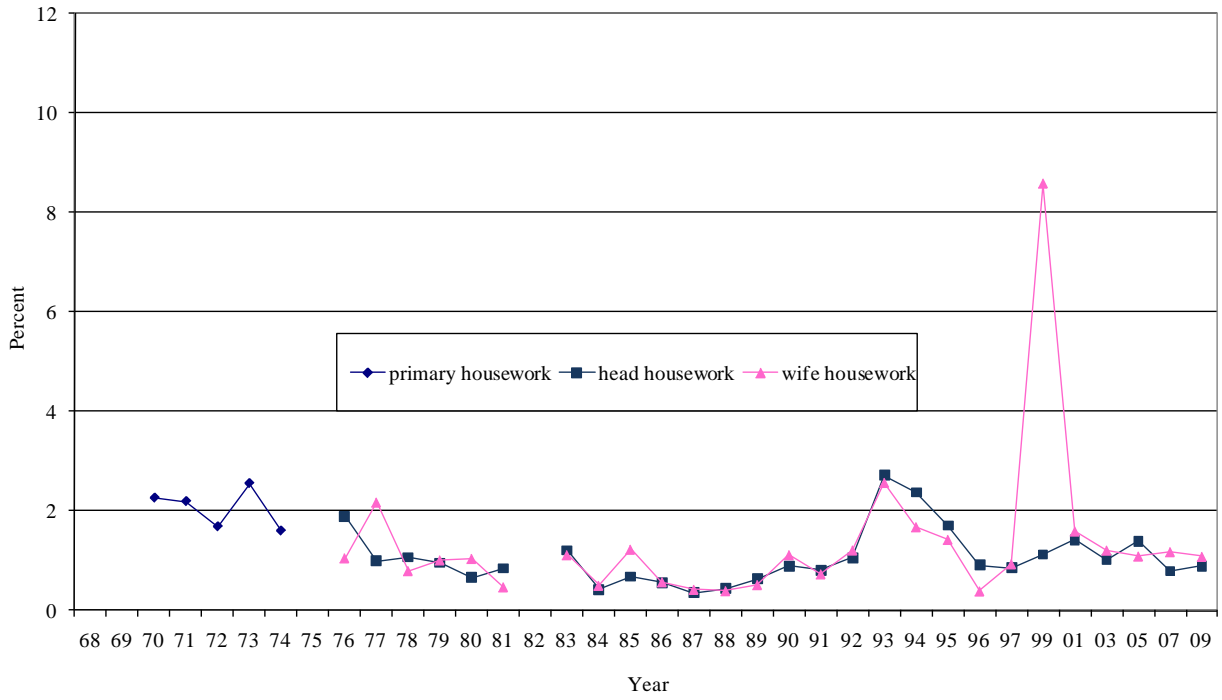


Figure 10. Non-Response Rate for Dwelling Unit Type

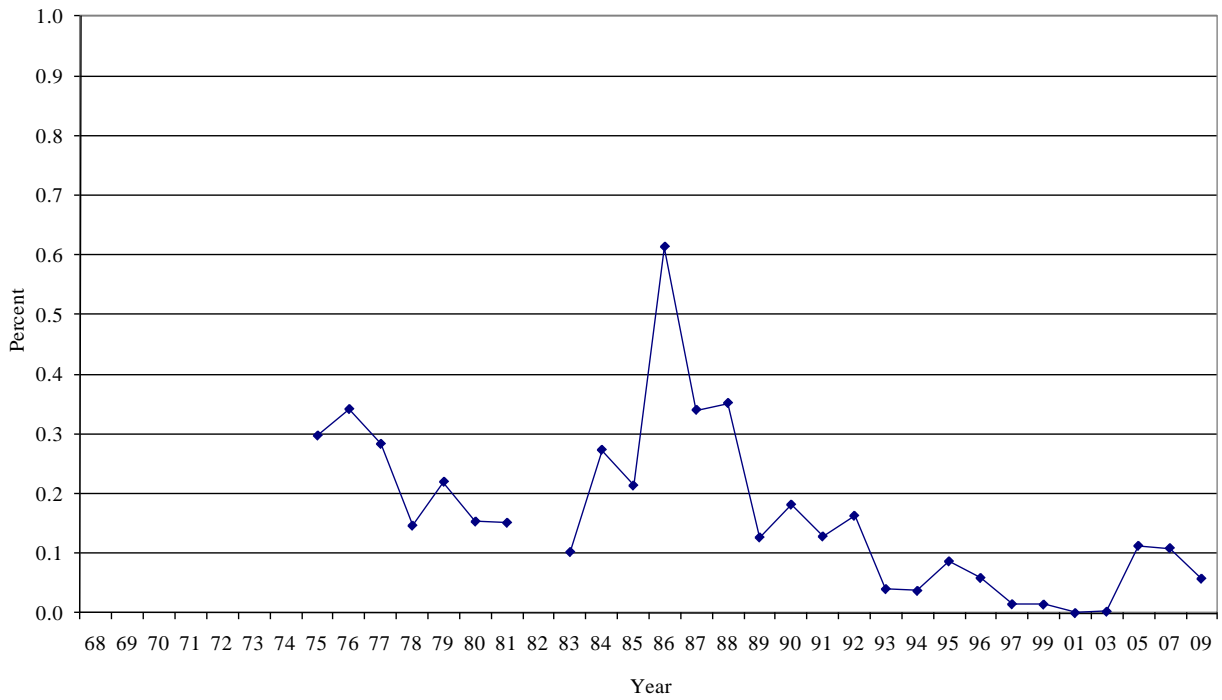
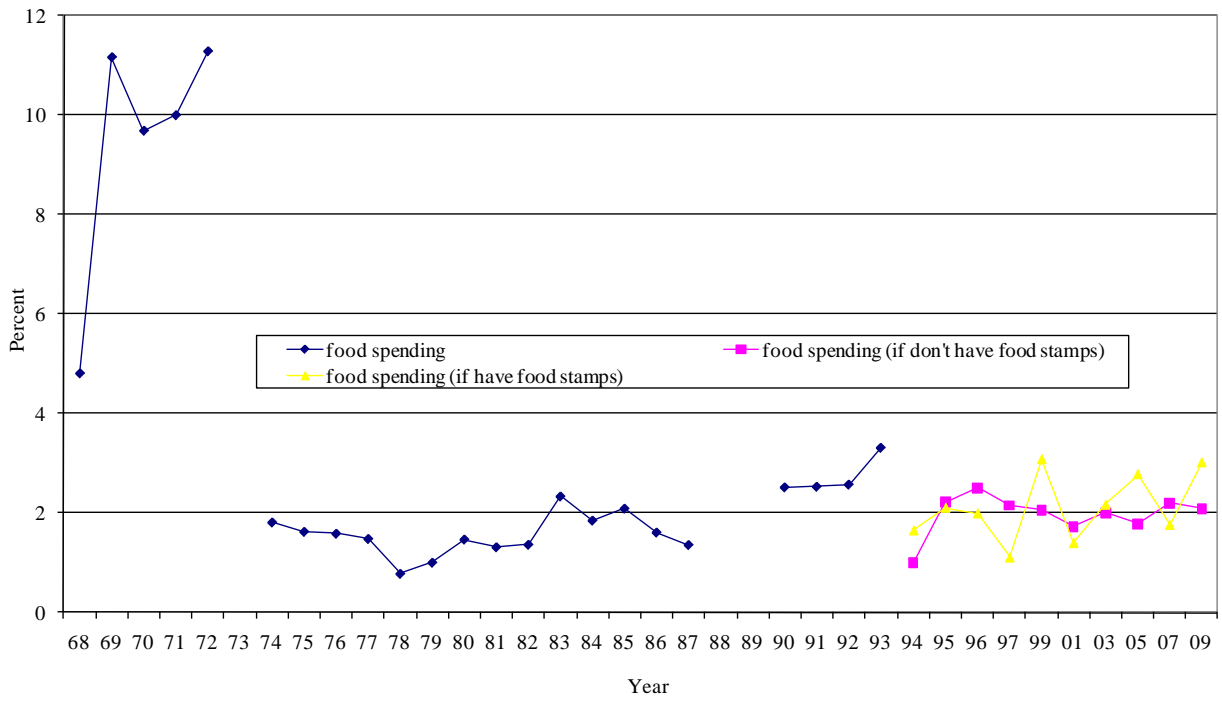


Figure 11. Non-Response Rate for Spending on Food Consumed at Home



## **Appendix. Specifications for Measurement of Non-Response Rates and Variables Examined in Each Year**

The following provides the rules used to generate the non-response rate for each variable, across years.

### **Hours / weeks worked on main job in previous year (heads, wives)**

Years Available: 1970-2009. 1968 and 1969 include categories only, and so are excluded.

Inclusion in Denominator: if value > 0 (i.e., excludes those who did not work in the previous year, and are therefore not asked the question)

Inclusion in Numerator (1970-1992): if value > 98

Inclusion in Numerator (1993): if accuracy code > 0

Inclusion in Numerator (1994-2009): if value > 997

### **Wage and salary (heads, wives):**

Years Available: 1970-2009. 1968 and 1969 include categories only, so these years are excluded. The variables used for heads and for wives are not strictly comparable. For wives, we examine total labor income, while for heads we use income from wages and salaries only. This is because wives are not asked in detail about the sources of their labor income, so we do not have a measure only of wages and salaries. Conversely, although a total labor income variable is computed for heads, it is constructed by summing responses to several questions and does not always have its own accuracy code.

Inclusion in Denominator: if value > 0

Inclusion in Numerator (1970-1993: if accuracy code > 0)

Inclusion in Numerator (1994-2009: if value > 9999997)

### **Industry (heads, wives):**

Years Available: 1971-2009 (head), 1976 and 1979-2009 (wife)

Inclusion in Denominator: if value > 0 (i.e., employed)

Inclusion in Numerator (1971-1980): if value > 98

Inclusion in Numerator (1981-2009): if value > 997

### **Occupation (heads, wives):**

Years Available: 1974 and 1976-2009 (head), 1976 and 1979-2009 (wife)

In 1968-1973, and in 1975, only a one-digit code for occupation, which is both “miscellaneous” and the non-responses, so a non-response rate cannot be generated and these years are dropped.

Inclusion in Denominator: if value > 0 (i.e., employed)

Inclusion in Numerator (1974): if value > 998

Inclusion in Numerator (1976-1980): if value > 98

Inclusion in Numerator (1981-2009): if value > 997

### **Whether main job covered by union contract (heads, wives):**

Years Available: 1976-2009 (heads), 1976 and 1979-2009 (wives)

Inclusion in Denominator: if value > 0 (i.e., only those who are employed and not only self-employed; others are not asked the question)

Inclusion in Numerator: if value > 5

**ADC/AFDC/TANF receipt (heads + wives; heads, wives)**

Years Available: 1969-2009. In 1969-1985, information is collected about total ADC/AFDC receipt of heads and wives together. 1986-2009, information is collected about receipt by heads and wives separately

Inclusion in Denominator (1969-1985): all households

Inclusion in Denominator (1986-2009): all heads and wives

Inclusion in Numerator (1969-1992, 2001): if accuracy code > 0

Inclusion in Numerator (1993): if value > 99998

Inclusion in Numerator (1994-1999, 2003-2009): if value > 999997

**General health status (heads, wives):**

Years Available: 1984 - 2009.

Inclusion in Denominator: if value > 0

Inclusion in Numerator: if value > 5

**Housework hours (primary; heads, wives):**

Years Available: 1970-1974, 1976-1981, 1983-2009. 1969 includes only categories, and so is excluded. 1970-1974 provide information on the member of the family unit who does most of the housework. 1975-2009 provides data on housework hours of heads and wives.

Inclusion in Denominator (1970-1974): all households that report that someone does housework

Inclusion in Numerator (1970-1974): if value > 98

Inclusion in Denominator (1976-2009): all heads and wives

Inclusion in Numerator (1976-1992): if value > 98

Inclusion in Numerator (1993): if accuracy code > 0

Inclusion in Numerator (1994-2009): if value > 997

**Type of dwelling unit**

Years Available: 1975-1981, 1983-2009. For 1968-1972, the response “other” and non-respondents are placed in the same category. Therefore, these years are excluded.

Inclusion in Denominator: if value > 0

Inclusion in Numerator: if value > 8

**Expenditures for food at home**

Year Available: 1968-1972, 1974-1987, 1990-2009. For years 1994 and later, the results are separated into two groups: those who received food stamps in the previous month and those who did not.

Inclusion in Denominator (1968-1993): all households

Inclusion in Numerator (1968-1993): if accuracy code > 0

Inclusion in Denominator (1994-2009, with stamps): all households that reported receiving food stamps in the previous month

Inclusion in Denominator (1994-2009, without stamps): all households that reported not receiving stamps in the previous month  
Inclusion in Numerator (1994-2009): if value > 99997

Table A1. Names of Variables Used in Analyses

Year	Hours of work at main job				Wage and Salary				Industry		Occupation	
	Head	Accuracy	Wife	Accuracy	Head	Accuracy	Wife	Accuracy	Head	Wife	Head	Wife
1968												
1969												
1970	V1293		V1369		V1191	V1192	V1198	V1199				
1971	V1999		V2077		V1892	V1893	V1899	V1900	V1985			
1972	V2597		V2675		V2493	V2494	V2500	V2501	V2583			
1973	V3130		V3186		V3046	V3047	V3053	V3054	V3116			
1974	V3545		V3604		V3458	V3459	V3465	V3466	V3531		V3529	
1975	V3999		V4058		V3858	V3859	V3865	V3866	V3969			
1976	V4508		V4891		V4373	V4374	V4379	V4380	V4460	V4843	V4459	V4842
1977	V5418		V5523		V5283	V5284	V5289	V5290	V5375		V5374	
1978	V5905		V6052		V5782	V5783	V5788	V5789	V5874		V5873	
1979	V6516		V6612		V6391	V6392	V6398	V6399	V6498	V6597	V6497	V6596
1980	V7119		V7214		V6981	V6982	V6988	V6989	V7101	V7199	V7100	V7198
1981	V7742		V7905		V7573	V7574	V7580	V7581	V7713	V7886	V7712	V7885
1982	V8404		V8563		V8265	V8266	V8273	V8274	V8381	V8545	V8380	V8544
1983	V9035		V9213		V8873	V8874	V8881	V8882	V9012	V9195	V9011	V9194
1984	V10562		V10776		V10256	V10257	V10263	V10264	V10461	V10679	V10460	V10678
1985	V11706		V12069		V11397	V11398	V11404	V11405	V11652	V12015	V11651	V12014
1986	V13106		V13283		V12796	V12797	V12803	V12804	V13055	V13234	V13054	V13223
1987	V14204		V14377		V13898	V13899	V13905	V13906	V14155	V14330	V14154	V14329
1988	V15258		V15560		V14913	V14914	V14920	V14921	V15163	V15465	V15162	V15464
1989	V16759		V17078		V16413	V16414	V16420	V16421	V16664	V16983	V16663	V16982
1990	V18197		V18499		V17829	V17830	V17836	V17837	V18102	V18404	V18101	V18403
1991	V19497		V19799		V19129	V19130	V19136	V19137	V19402	V19704	V19401	V19703
1992	V20797		V21099		V20429	V20430	V20436	V20437	V20702	V21004	V20701	V21003
1993	V22577	V22578	V22930	V22931	V21739	V21740	V21807	V21808	V22457	V22810	V22456	V22809
1994	ER2225		ER2719		ER3139		ER3479		HDIND94	WFIND94	HDOCC94	WFOCC94
1995	ER5224		ER5718		ER6139		ER6480		HDIND95	WFIND95	HDOCC95	WFOCC95
1996	ER7320		ER7814		ER8256		ER8597		HDIND96	WFIND96	HDOCC96	WFOCC96
1997	ER10232		ER10714		ER11150		ER11491		HDIND97	WFIND97	HDOCC97	WFOCC97
1999	ER13363		ER13875		ER14416		ER14757		HDIND99	WFIND99	HDOCC99	WFOCC99
2001	ER17393		ER17963		ER18561		ER18930		HDIND01	WFIND01	HDOCC01	WFOCC01
2003	ER21176		ER21426		ER21929		ER22300		ER21146	ER21396	ER21145	ER21395
2005	ER25165		ER25423		ER25910		ER26281		ER25128	ER25386	ER25127	ER25385
2007	ER36170		ER36428		ER36928		ER37299		ER36133	ER36391	ER36132	ER36390
2009	ER46671		ER46682		ER42919		ER43290		ER42168	ER42420	ER42167	ER42419

Table A1 (Continued). Names of Variables Used in Analyses

Year	Union contract		AD/AFDC/TANF						General health status	
	Head	Wife	Head + Wife	Accuracy	Head	Accuracy	Wife	Accuracy	Head	Wife
1968										
1969			V523	V524						
1970			V1209	V1210						
1971			V1911	V1912						
1972			V2512	V2513						
1973			V3065	V3066						
1974			V3477	V3478						
1975			V3877	V3878						
1976	V4478	V4861	V4392	V4393						
1977	V5382		V5303	V5304						
1978	V5877		V5802	V5803						
1979	V6495	V6594	V6413	V6414						
1980	V7098	V7196	V7003	V7004						
1981	V7709	V7882	V7595	V7596						
1982	V8377	V8541	V8288	V8289						
1983	V9008	V9191	V8896	V8897						
1984	V10458	V10676	V10282	V10283					V10877	V10884
1985	V11649	V12012	V11427	V11428					V11991	V12344
1986	V13052	V13231			V12826	V12827	V12847	V12848	V13417	V13452
1987	V14152	V14327			V13928	V13929	V13949	V13950	V14513	V14524
1988	V15160	V15462			V14943	V14944	V14964	V14965	V15993	V15999
1989	V16661	V16980			V16443	V16444	V16464	V16465	V17390	V17396
1990	V18099	V18401			V17859	V17860	V17880	V17881	V18721	V18727
1991	V19399	V19701			V19159	V19160	V19180	V19181	V20021	V20027
1992	V20699	V21001			V20459	V20460	V20480	V20481	V21321	V21328
1993	V22454	V22807			V21964		V22238		V23180	V23187
1994	ER2079	ER2573			ER3263		ER3599		ER3853	ER3858
1995	ER5078	ER5572			ER6263		ER6601		ER6723	ER6728
1996	ER7174	ER7668			ER8380		ER8718		ER8969	ER8974
1997	ER10089	ER10571			ER11273		ER11600		ER11723	ER11727
1999	ER13213	ER13725			ER14539		ER14866		ER15447	ER15555
2001	ER17224	ER17794			ER18698	ER18700	ER19047	ER19049	ER19612	ER19720
2003	ER21150	ER21400			ER22070		ER22420		ER23009	ER23136
2005	ER25138	ER25396			ER26051		ER26401		ER26990	ER27113
2007	ER36143	ER36401			ER37069		ER37419		ER38202	ER39299
2009	ER42178	ER42430			ER43060		ER43410		ER44175	ER45272



Table A1 (Continued). Names of Variables Used in Analyses

Year	Housework						Housing Type	Food expenditures				
	Who primary?	Primary	Head	Accuracy	Wife	Accuracy		Spending	Accuracy	Food Stamp Program?	Spending (no FSP)	Spending (yes FSP)
1968								V37	V38			
1969	V616	V617						V500	V501			
1970	V1375	V1376						V1175	V1176			
1971	V2087	V2088						V1876	V1877			
1972	V2688	V2689						V2476	V2477			
1973	V3203	V3204										
1974	V3622	V3623						V3441	V3442			
1975							V3938	V3841	V3842			
1976			V4609		V4768		V4449	V4354	V4355			
1977			V5535		V5534		V5363	V5271	V5272			
1978			V6073		V6072		V5863	V5770	V5771			
1979			V6664		V6663		V6478	V6376	V6377			
1980			V7266		V7265		V7081	V6972	V6973			
1981			V7957		V7956		V7672	V7564	V7565			
1982								V8256	V8257			
1983			V9281		V9280		V8970	V8864	V8865			
1984			V10867		V10866		V10433	V10235	V10236			
1985			V11982		V12337		V11613	V11375	V11376			
1986			V13394		V13393		V13018	V12774	V12775			
1987			V14486		V14485		V14121	V13876	V13877			
1988			V15759		V15758		V15137					
1989			V17294		V17293		V16638					
1990			V18698		V18697		V18056	V17807	V17808			
1991			V19998		V19997		V19356	V19107	V19108			
1992			V21298		V21297		V20658	V20407	V20408			
1993			V23156	V23157	V23154	V23155	V22413	V21707	V21708			
1994			ER3056		ER3055		ER2015			ER3059	ER3085	ER3078
1995			ER6055		ER6054		ER5014			ER6058	ER6084	ER6077
1996			ER8152		ER8151		ER7014			ER8155	ER8181	ER8174
1997			ER11046		ER11045		ER10017			ER11049	ER11076	ER11068
1999			ER14230		ER14229		ER13022			ER14270	ER14295	ER14288
2001			ER18359		ER18357		ER17025			ER18402	ER18431	ER18421
2003			ER21625		ER21623		ER21024			ER21668	ER21696	ER21686
2005			ER25622		ER25620		ER25024			ER25670	ER25698	ER25688
2007			ER36627		ER36625		ER36024			ER36688	ER36716	ER36706
2009			ER42646		ER42644		ER42025			ER42707	ER42722	ER42712