

Hethey-Maier, Tanja; Schmieder, Johannes F.

Article

Does the Use of Worker Flows Improve the Analysis of Establishment Turnover? Evidence from German Administrative Data

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Web Appendix – Not for Publication

Table WA-1

Establishment Entry Categories by Year: Number of Establishments

Panel A: West Germany								
	ID- Change	Spin-off pulled	Spin-off/ pushed	New estab. (small)	New estab (med & big)	New estab. (fuzzy)	Unclear	Total
1976	503	1,884	577	129,286	7,307	6,235	876	146,668
1977	547	1,674	845	109,455	6,147	6,654	781	126,103
1978	552	1,477	728	107,275	6,661	6,665	912	124,270
1979	637	1,182	637	104,953	7,138	6,667	945	122,159
1980	640	2,221	732	106,188	6,932	7,330	923	124,966
1981	689	1,543	847	98,169	6,124	6,794	929	115,095
1982	699	1,500	1,071	95,663	5,580	6,243	824	111,580
1983	859	1,455	1,328	96,602	5,789	6,230	856	113,119
1984	885	1,381	1,048	104,372	6,383	6,251	1,008	121,328
1985	796	1,274	1,185	101,405	5,994	6,185	961	117,800
1986	887	1,168	1,055	105,311	6,772	7,000	1,295	123,488
1987	987	1,353	1,165	100,861	6,097	6,731	1,105	118,299
1988	997	1,454	1,118	101,671	6,035	7,018	1,178	119,471
1989	1,033	1,611	1,139	102,444	6,494	7,375	1,333	121,429
1990	1,092	1,344	991	116,058	7,975	8,260	1,521	137,241
1991	1,163	1,376	1,188	118,157	8,257	8,739	1,447	140,327
1992	1,129	1,460	1,208	109,933	7,213	8,646	1,411	131,000
1993	1,367	1,915	1,688	108,100	7,160	8,816	1,513	130,559
1994	1,425	2,218	1,910	107,840	7,278	8,628	1,340	130,639
1995	1,213	2,250	1,678	111,946	7,289	8,208	1,217	133,801
1996	1,183	3,067	2,092	111,463	7,571	9,058	1,348	135,782
1997	1,378	2,692	1,850	108,795	7,105	7,983	1,305	131,108

Continued next page

Table WA-1 (continued)

Panel A: West Germany								
	ID- Change	Spin-off pulled	Spin-off/ pushed	New estab. (small)	New estab (med & big)	New estab. (fuzzy)	Unclear	Total
1998	1,459	2,482	1,785	114,966	7,743	8,561	31,404	138,400
1999	1,340	2,359	2,020	198,391	9,924	9,555	1,569	225,158
2000	1,436	2,177	1,626	145,207	10,370	10,284	1,857	172,957
2001	1,396	2,424	2,036	131,542	9,262	10,708	1,658	159,026
2002	1,849	2,440	2,384	119,153	7,369	9,941	1,638	144,774
2003	1,623	2,781	2,803	100,078	6,530	9,158	1,386	124,359
2004	1,844	2,366	2,310	107,494	6,692	8,754	1,692	131,152
Total	31,608	54,528	41,044	3,272,778	207,191	228,677	36,232	3,872,058
Panel B: East Germany								
	ID- Change	Spin-off pulled	Spin-off/ pushed	New estab. (small)	New estab (med & big)	New estab. (fuzzy)	Unclear	Total
1992	114	3,070	1,124	115,417	32,786	8,454	481	161,446
1993	284	3,878	729	51,233	6,590	5,987	745	69,446
1994	395	2,466	719	41,531	6,035	5,103	728	56,977
1995	441	2,302	764	37,710	5,280	4,716	679	51,892
1996	521	2,317	1,136	31,929	3,896	4,483	618	44,900
1997	544	1,512	921	29,585	3,434	3,759	538	40,293
1998	556	1,104	931	48,786	3,563	3,673	595	59,208
1999	543	807	893	53,505	3,771	3,451	604	63,574
2000	559	828	776	34,633	3,001	3,129	603	43,529
2001	523	870	862	29,213	2,511	2,961	506	37,446
2002	661	743	890	26,520	2,057	2,655	502	34,028
2003	549	1,516	739	24,181	1,962	2,367	460	31,774
2004	612	785	686	23,453	1,736	2,079	452	29,803
Total	6,302	22,198	11,170	547,696	76,622	52,817	7,511	724,316

Table WA-2
Establishment Entry Categories by Year: Number of Workers in Establishments

Panel A: West Germany								
	ID- Change	Spin-off pulled	Spin-off/ pushed	New estab. (small)	New estab (med & big)	New estab. (fuzzy)	Unclear	Total
1976	6,403	42,624	8,247	162,757	72,400	85,592	14,053	392,076
1977	7,001	43,326	11,655	137,676	59,939	86,255	11,775	357,627
1978	7,921	33,229	11,357	135,952	66,958	84,056	15,301	354,774
1979	11,168	24,982	8,948	134,857	66,874	85,265	12,690	344,784
1980	9,200	37,481	9,725	138,092	64,524	89,162	13,959	362,143
1981	9,316	35,244	11,162	127,391	55,713	81,853	12,930	333,609
1982	12,080	31,912	16,090	121,937	46,210	68,904	13,502	310,635
1983	13,292	33,616	21,938	123,630	49,994	70,408	11,617	324,495
1984	14,644	32,571	14,722	133,322	57,307	64,947	18,103	335,616
1985	12,326	25,455	15,199	128,831	55,053	68,766	16,026	321,656
1986	18,360	26,540	13,978	136,057	59,826	85,260	21,902	361,923
1987	16,515	31,366	18,645	130,509	64,070	79,249	18,806	359,160
1988	16,485	29,984	16,356	132,024	54,305	88,999	23,480	361,633
1989	13,428	44,577	17,561	132,872	58,685	87,902	24,367	379,392
1990	16,831	48,035	15,614	148,459	73,187	107,811	28,393	438,330
1991	18,443	42,995	14,650	153,191	80,299	109,335	25,106	444,019
1992	15,155	45,680	16,218	143,795	65,406	102,556	20,767	409,577
1993	19,693	66,986	27,315	141,979	62,887	109,199	29,667	457,726
1994	20,306	69,184	28,045	142,592	65,342	105,401	24,712	455,582
1995	21,514	91,419	31,324	146,835	70,045	104,450	30,809	496,396
1996	21,938	111,502	41,125	146,381	78,854	147,292	42,776	589,868
1997	29,731	99,108	31,373	140,979	71,982	112,905	28,680	514,758
1998	27,742	93,713	27,018	150,064	78,972	117,366	28,748	523,623
1999	26,200	90,773	40,274	173,692	103,573	149,096	37,289	620,897

Continued next page

Table WA-2 (continued)

Panel A: West Germany								
	ID- Change	Spin-off pulled	Spin-off/ pushed	New estab. (small)	New estab (med & big)	New estab. (fuzzy)	Unclear	Total
2000	27,419	79,612	32,501	163,065	120,933	155,978	42,874	622,382
2001	32,627	82,724	36,252	152,292	101,440	178,760	41,161	625,256
2002	47,372	79,929	42,735	137,507	76,560	154,129	60,298	598,530
2003	39,406	77,663	49,841	129,536	75,292	143,321	30,873	545,932
2004	40,547	89,441	41,456	124,614	70,851	130,249	51,655	548,813
Total	573,063	1,641,671	671,324	4,070,888	2,027,481	3,054,466	752,319	1.28e+07
Panel B: East Germany								
	ID- Change	Spin-off pulled	Spin-off/ pushed	New estab. (small)	New estab (med & big)	New estab. (fuzzy)	Unclear	Total
1992	1,676	584,826	28,416	177,046	368,820	140,088	7,136	808,008
1993	5,268	97,942	15,839	69,015	73,573	96,985	13,610	372,232
1994	6,995	58,419	14,058	57,836	75,365	88,210	16,480	317,363
1995	8,375	51,591	19,605	52,771	61,554	66,051	14,650	274,597
1996	7,760	68,988	17,010	44,724	45,617	89,310	14,618	288,027
1997	13,958	28,389	12,675	41,232	37,056	46,593	10,503	190,406
1998	8,658	18,842	11,896	65,364	39,076	44,724	10,816	199,376
1999	7,788	11,704	12,280	68,560	39,144	40,464	12,680	192,620
2000	9,886	15,833	10,968	45,348	31,473	38,832	10,228	162,568
2001	11,435	15,339	12,496	38,745	28,003	41,314	15,681	163,013
2002	13,731	15,132	12,657	34,541	22,709	33,743	11,728	144,241
2003	12,081	31,294	10,355	32,948	21,934	31,227	11,749	151,588
2004	14,633	15,561	9,707	29,135	19,393	27,499	10,180	126,108
Total	122,244	513,860	187,962	757,265	863,717	785,040	160,059	3,390,147

Table WA-3
Establishment Exit Categories by Year: Number of Establishments

Panel A: West Germany								
	ID- Change	Spin-off pulled	Spin-off/ pushed	New estab. (small)	New estab (med & big)	New estab. (fuzzy)	Unclear	Total
1975	373	807	898	70,092	5,405	4,600	391	182,566
1976	453	771	1,334	74,017	6,025	5,140	417	88,157
1977	498	824	1,186	75,222	5,339	5,036	428	88,533
1978	586	866	1,081	72,065	4,683	5,228	488	84,997
1979	602	763	1,232	77,665	5,232	5,365	516	91,375
1980	628	694	1,416	79,387	6,204	5,441	485	94,255
1981	644	767	1,761	80,768	7,503	5,233	463	97,139
1982	807	667	2,138	82,882	7,559	5,353	534	99,940
1983	842	716	1,785	83,262	6,599	5,183	568	98,955
1984	767	574	2,075	89,099	7,506	4,909	540	105,470
1985	863	700	1,875	90,329	6,963	5,692	769	107,191
1986	958	699	2,025	89,840	6,655	5,574	676	106,427
1987	974	748	1,903	89,702	6,266	5,965	729	106,287
1988	979	818	1,874	88,931	5,776	6,098	726	105,202
1989	1,042	840	1,760	90,206	5,882	6,845	883	107,458
1990	1,121	850	1,986	93,627	6,507	7,344	870	112,305
1991	1,108	936	2,170	100,218	7,187	7,519	908	120,046
1992	1,301	959	2,722	98,146	8,082	7,408	937	119,555
1993	1,345	1,072	3,030	99,534	8,815	7,575	859	122,230
1994	1,176	984	2,820	102,032	8,810	7,274	793	123,889
1995	1,127	1,127	3,075	104,628	8,668	7,097	788	126,510
1996	1,382	1,160	3,113	108,133	9,195	7,121	857	130,961
1997	1,440	1,194	3,053	110,512	8,839	7,444	926	133,408
1998	1,329	1,378	3,355	113,080	8,865	8,700	964	137,671

Continued next page

Table WA-3 (continued)

Panel A: West Germany								
	ID- Change	Spin-off pulled	Spin-off/ pushed	New estab. (small)	New estab (med & big)	New estab. (fuzzy)	Unclear	Total
1999	1,402	1,451	2,768	133,369	9,064	9,192	1,211	158,457
2000	1,395	1,403	3,305	141,628	10,846	9,623	1,085	169,285
2001	1,847	1,855	3,981	156,269	12,445	9,925	1,209	187,531
2002	1,664	1,562	4,613	217,369	13,152	9,534	956	248,850
2003	1,926	1,870	4,095	157,378	11,935	8,687	1,203	187,094
Total	30,579	29,055	68,429	2,969,390	226,007	196,105	22,179	3,541,744
Panel B: East Germany								
	ID- Change	Spin-off pulled	Spin-off/ pushed	New estab. (small)	New estab (med & big)	New estab. (fuzzy)	Unclear	Total
1991	106	401	825	18,233	3,809	32,340	290	26,004
1992	263	454	796	22,308	3,101	2,531	451	29,904
1993	362	508	893	23,536	3,698	2,963	496	32,456
1994	401	536	963	24,532	4,219	2,884	449	33,984
1995	440	501	1,293	25,074	4,702	2,869	406	35,285
1996	502	487	1,355	25,339	4,881	2,860	337	35,761
1997	534	514	1,448	26,139	4,840	2,817	390	36,682
1998	525	630	1,365	39,206	4,432	3,139	432	49,729
1999	551	477	1,239	46,739	4,778	2,819	394	56,997
2000	524	483	1,401	41,216	5,142	2,951	352	52,069
2001	664	590	1,396	38,955	4,719	2,839	405	49,568
2002	571	460	1,236	40,470	4,002	2,478	342	49,559
2003	623	548	1,099	38,890	3,745	2,297	411	47,613
Total	6,066	6,589	15,309	410,637	56,068	35,787	5,155	535,611

Table WA-4

Establishment Exit Categories by Year: Number of Workers in Establishments

Panel A: West Germany								
	ID- Change	Spin-off pulled	Spin-off/ pushed	New estab. (small)	New estab (med & big)	New estab. (fuzzy)	Unclear	Total
1975	4,323	14,367	16,213	89,376	69,221	62,744	5,864	262,108
1976	5,516	11,452	22,150	94,327	81,208	67,177	5,334	287,164
1977	6,445	15,658	21,527	94,427	60,562	62,963	6,120	267,702
1978	10,827	15,543	16,528	90,942	49,376	70,965	5,346	259,527
1979	8,766	10,631	17,872	98,735	55,008	68,459	6,640	266,111
1980	8,686	9,189	22,556	101,394	68,756	66,314	5,766	282,661
1981	10,897	15,294	32,161	104,186	90,119	60,403	5,702	318,762
1982	11,494	10,065	43,991	105,728	83,868	62,650	6,011	323,807
1983	13,887	13,388	31,186	106,061	72,259	61,893	7,366	306,040
1984	11,533	8,943	34,507	113,195	84,352	55,308	7,915	315,753
1985	14,337	12,474	29,918	114,989	74,696	64,956	10,090	321,460
1986	15,918	13,129	35,627	113,863	71,384	66,905	11,035	327,861
1987	15,128	12,690	29,703	114,162	63,023	72,690	11,460	318,856
1988	12,372	13,950	30,052	113,454	56,951	68,801	12,170	307,750
1989	16,503	13,195	25,890	115,542	63,692	81,962	14,059	330,843
1990	15,819	14,538	25,146	118,992	62,224	93,707	12,199	342,625
1991	14,316	12,759	31,882	127,342	71,788	87,569	13,461	359,117
1992	19,661	15,216	46,381	126,285	87,295	97,215	14,920	406,973
1993	19,878	17,477	52,471	128,883	98,784	99,537	14,045	431,075
1994	20,676	15,033	52,837	132,260	94,370	89,206	14,632	419,014
1995	20,570	20,831	61,725	134,562	92,855	94,315	17,701	442,559
1996	30,492	21,108	55,285	139,655	98,537	96,340	15,822	457,239
1997	24,511	21,685	49,133	143,042	88,115	98,347	13,162	437,995
1998	26,251	22,649	63,284	146,779	90,130	124,497	16,922	490,512

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Table WA-4 (continued)

Panel A: West Germany								
	ID- Change	Spin-off pulled	Spin-off/ pushed	New estab. (small)	New estab (med & big)	New estab. (fuzzy)	Unclear	Total
1999	26,248	25,135	52,002	147,071	92,078	120,617	21,182	484,333
2000	31,189	27,880	60,509	160,267	119,171	143,568	18,060	560,644
2001	47,469	34,849	75,714	175,867	140,823	145,410	30,519	650,651
2002	41,047	34,628	95,664	190,343	141,596	146,929	24,361	674,568
2003	42,181	42,515	78,223	193,138	122,998	122,366	25,715	627,136
Total	546,940	516,271	1,210,137	3,634,867	2,445,239	2,553,813	373,579	1.13e+07
Panel B: East Germany								
	ID- Change	Spin-off pulled	Spin-off/ pushed	New estab. (small)	New estab (med & big)	New estab. (fuzzy)	Unclear	Total
1991	1,655	12,611	65,565	24,106	146,752	80,603	7,936	339,228
1992	4,645	11,877	27,045	29,778	50,596	60,413	8,595	192,949
1993	6,366	8,867	25,496	31,889	55,904	49,291	9,002	186,815
1994	7,843	13,940	32,057	34,196	59,088	50,124	6,707	203,955
1995	6,706	7,966	28,305	34,830	67,475	46,851	7,853	199,986
1996	12,118	6,803	28,987	35,685	65,804	39,835	5,143	194,375
1997	7,989	8,273	28,364	36,851	61,926	40,120	5,156	188,679
1998	7,609	9,449	23,799	52,531	51,288	39,312	7,234	191,222
1999	9,922	6,228	22,502	60,616	54,436	33,137	7,818	194,659
2000	11,595	8,955	25,705	54,274	56,336	40,329	5,711	202,905
2001	14,050	8,450	25,233	51,003	53,255	36,421	6,839	195,251
2002	12,780	8,399	22,260	49,027	45,496	31,526	5,925	175,413
2003	15,142	8,868	19,776	50,957	39,497	30,026	5,512	169,778
Total	118,420	120,686	375,094	545,743	807,853	577,988	89,431	2,635,215

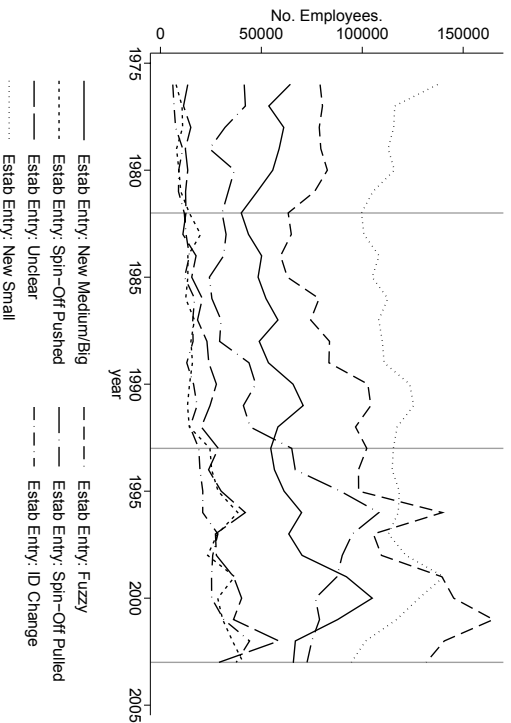


Figure WA-1: Number of Employees
in each Establishment Entry Category from 1976–2004

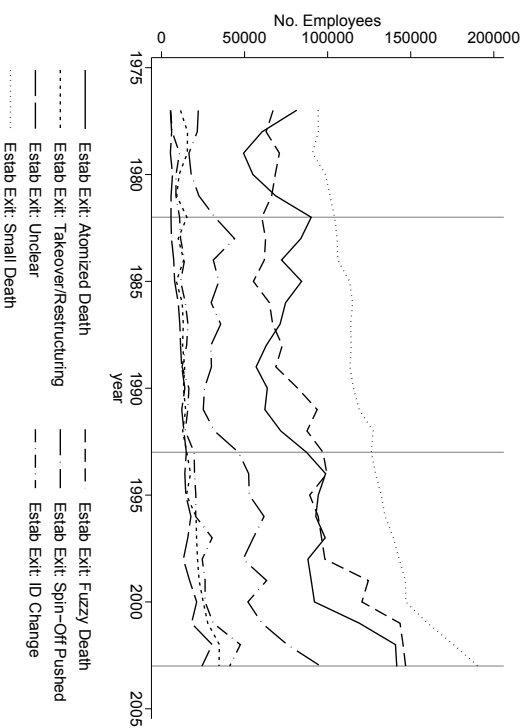
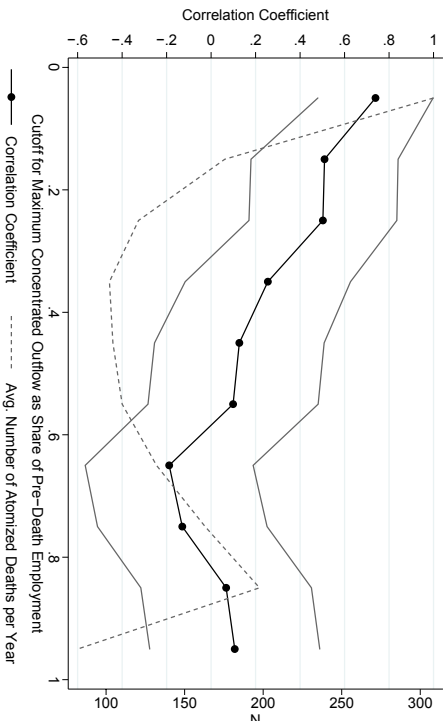
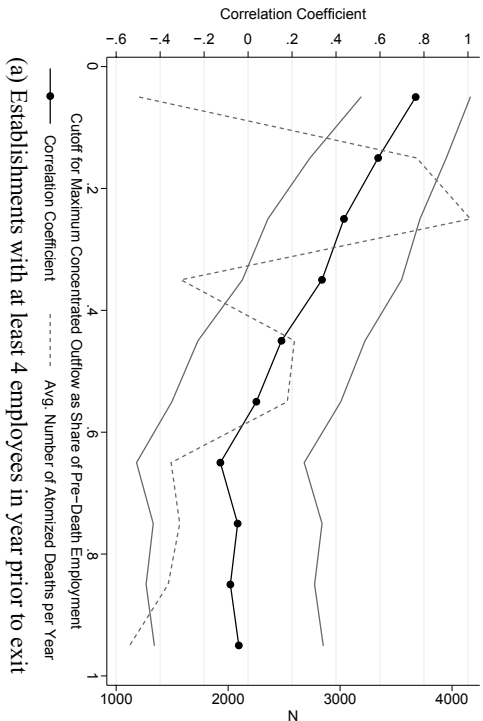
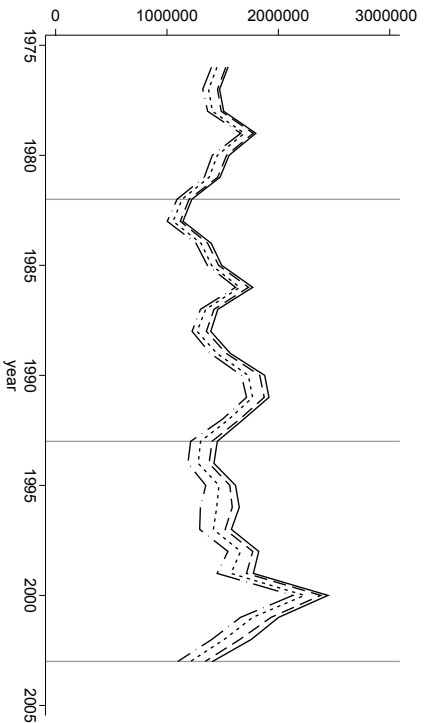


Figure WA-2: Number of Employees
in each Establishment Exit Category from 1976–2004



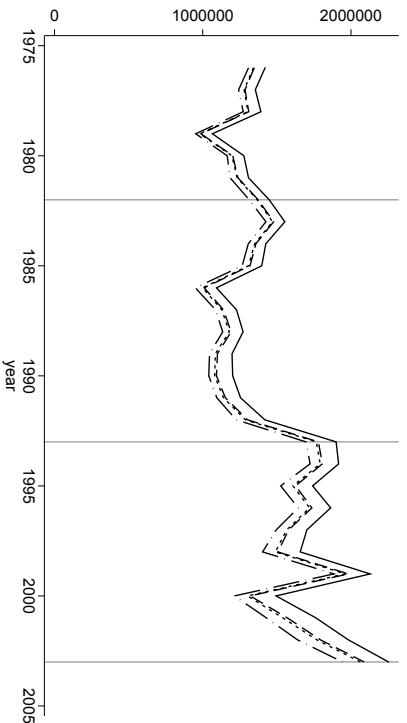
Notes: The figures show how the correlation between the number of establishment deaths per year and the change in the unemployment rate is affected by different thresholds for what constitutes an establishment death. For each point, all establishment deaths where the share of the maximum concentrated outflow of pre-exit employment falls into the given cutoff range (e.g., $[0-0.1]$ for the first bin) are calculated by year. Then the correlation between the (Hodrick-Prescott filtered) time series of establishment deaths and the year to year change in the unemployment rate is calculated. The left axis shows the correlation coefficient, while the right axis shows the average number of establishment deaths per year in the cutoff bin. The bands are 95% confidence intervals.

Figure WA-3: Correlation between
Number of Establishment Deaths per Year and the Business Cycle
as a Function of the Concentration of Employee Outflows



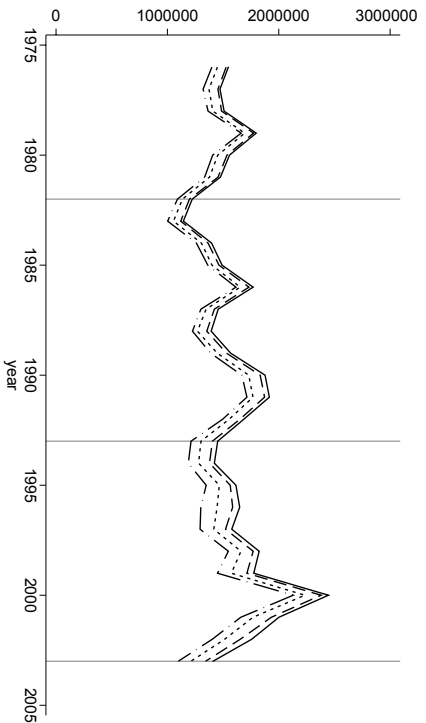
Notes: The figure shows corrected and uncorrected measures of total job creation by year. Vertical lines indicate recession years. Data: Establishment History Panel.

Figure WA-4: Correcting Total Job Creation Measures for Spurious Entries



Notes: The figure shows corrected and uncorrected measures of total job destruction by year. Vertical lines indicate recession years. Data: Establishment History Panel.

Figure WA-5: Correcting Total Job Destruction Measures for Spurious Exits



Notes: The figure shows corrected and uncorrected measures of net job creation by year. Vertical lines indicate recession years. Data: Establishment History Panel.

Figure WA-6: Correcting Total Net Job Creation Measures for Spurious Entries and Exits