1 Introduction

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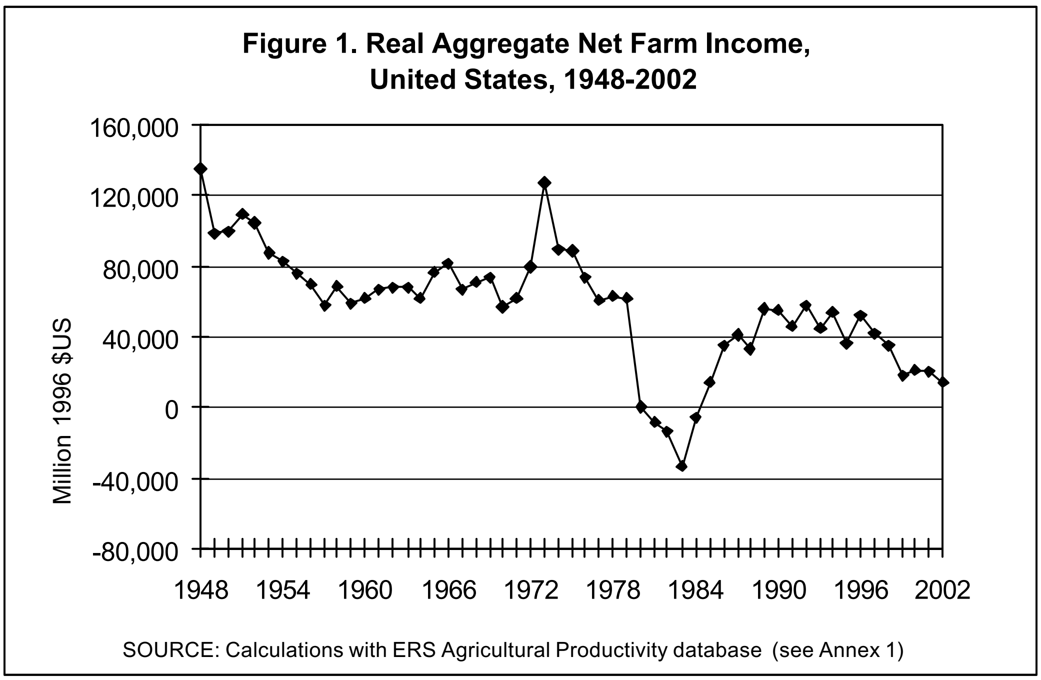
Figure 1. Real Aggregate Net Farm Income,
United States, 1948-2002
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80,000
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-40,000
-80,000
Million 1996 $US
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SOURCE: Calculations with ERS Agricultural Productivity database (see Annex 1)

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2 Net Farm Income and the Residual Claimant

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$$w_{N,t}^{I} = F_t / x_{N,t} \quad \text{B-C}$$

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$$w_{N,t}^{IR} = \left(F_t / h_t\right) / x_{N,t} \ , \quad \text{B+C}$$

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$$w_{N,t}^{IRG} = \left(F_t / h_t\right) / x_{N,t} \ - \left(F_{t-1} / h_{t-1}\right) / x_{N,t-1} \ . \quad \text{B*&C}$$

F7$ B*&C) F_t^G B/C ($F_{t-1} / \left(h_t x_{N,t}\right) -$
$F_{t-1} / \left(h_t x_{N,t}\right)$ # (B*&C

$$w_{N,t}^{IRG} = F_t / h_t x_{N,t} - F_{t-1} / h_t x_{N,t} - \left[F_{t-1} / \left(h_{t-1} x_{N,t-1}\right) - F_{t-1} / \left(h_t x_{N,t}\right)\right] \ . \quad \text{B**C}$$

$$F_{t-1} / \left(h_t x_{N,t}\right) \equiv w_{N,t-1}^{IR} \left(h_{t-1} x_{N,t-1}\right) / \left(h_t x_{N,t}\right).$$

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$$w_{N,t}^{IRG} = F_t^G / \left(h_t x_{N,t}\right) \; - w_{N,t-1}^{IR} \left[1 - \left(h_{t-1}/h_t\right)\left(x_{N,t-1}/x_{N,t}\right)\right] \quad . \qquad \text{B*\%C}$$

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B/C B*%C I

$$\begin{aligned} w_{N,t}^{IRG} &= I_R\left(\mathbf{p}_t, \mathbf{y}_t, \mathbf{p}_{t-1}, \mathbf{y}_{t-1}\right) / \left(h_t x_{N,t}\right) - \\ &\quad I_C\left(\mathbf{w}_t, \mathbf{x}_t, \mathbf{w}_{t-1}, \mathbf{x}_{t-1}\right) / \left(h_t x_{N,t}\right) + PFPG_t / \left(h_t x_{N,t}\right) - \\ &\quad w_{N,t-1}^{IR}\left[1 - \left(h_{t-1}/h_t\right)\left(x_{N,t-1}/x_{N,t}\right)\right] . \end{aligned} \qquad \text{B*AC}$$

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Table 1. Output and Input Coverage in the NFI Decomposition Database

OUTPUTS	INPUTS
Crop Aggregates	1. Capital excluding Land
1. Grain and Forage Crops	2. Land
2. Industrial Crops	3. Hired Labour
3.Vegetables	4. Farm-Produced Inputs[3]
4. Fruits and Tree Nuts	5. Purchased Materials[4]
5. Other Crops[1]	6. Purchased Services
	7. Unpaid Operator and Family Labour
Livestock Aggregates	
6. Meat Animals	
7. Poultry and Eggs	
8. Dairy	
9. Miscellaneous Livestock	
Other Aggregates	
10. Secondary Output[2]	

[1] Horticulture, potatoes and fruit, vegetables produced using farm resources but consumed by the farm family.

[2] Output from activities that are not related to crop or livestock production and that use the farm's resources to do this. Examples are value-added activities such as packaging/processing and the provision of services related to agricultural production, such as custom harvesting.

[3] Agricultural outputs that are produced on farm but also used as inputs, for example feed produced and used on the farm.

[4] Purchased from outside the agricultural sector.

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5 Results

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B"C $I_R(\mathbf{p}_t, \mathbf{y}_t, \mathbf{p}_{t-1}, \mathbf{y}_{t-1}) \,/\, (h_t x_{N,t})$;
B C $-I_C\left(\mathbf{w}_t, \mathbf{x}_t, \mathbf{w}_{t-1}, \mathbf{x}_{t-1}\right) / \left(h_t x_{N,t}\right)$;
B!C $PFPG_t / \left(h_t x_{N,t}\right)$;
BFC $-w_{N,t-1}^{IR}\left[1-\left(h_{t-1}/h_t\right)\left(x_{N,t-1}/x_{N,t}\right)\right]$.

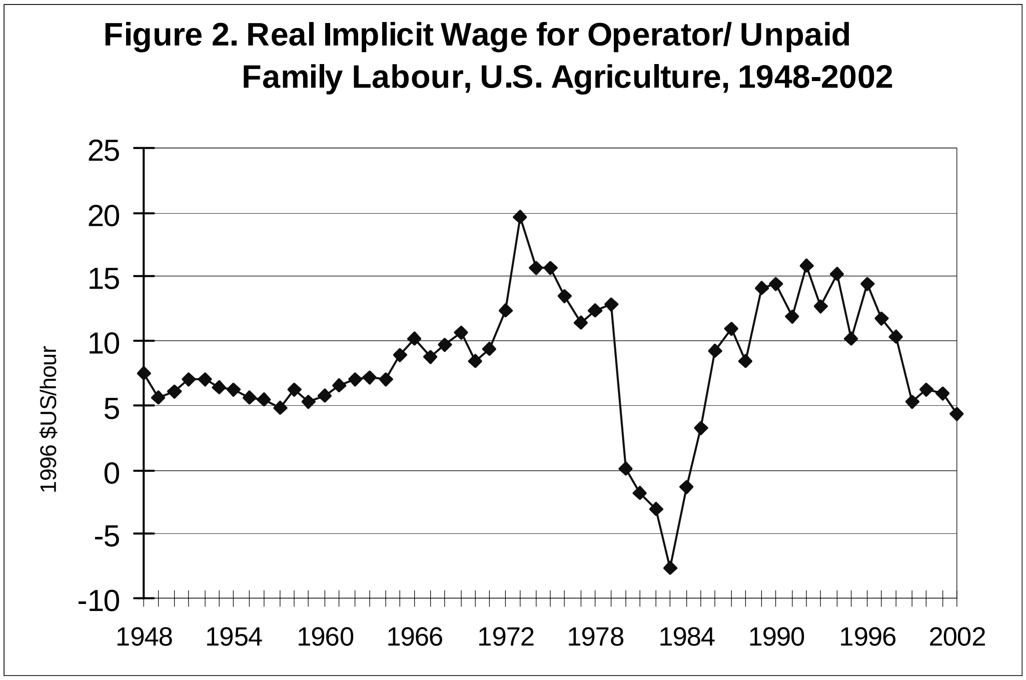
Figure 2. Real Implicit Wage for Operator/ Unpaid Family Labour, U.S. Agriculture, 1948-2002
1996 $US/hour
25
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15
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1948
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1972
1978
1984
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1996
2002

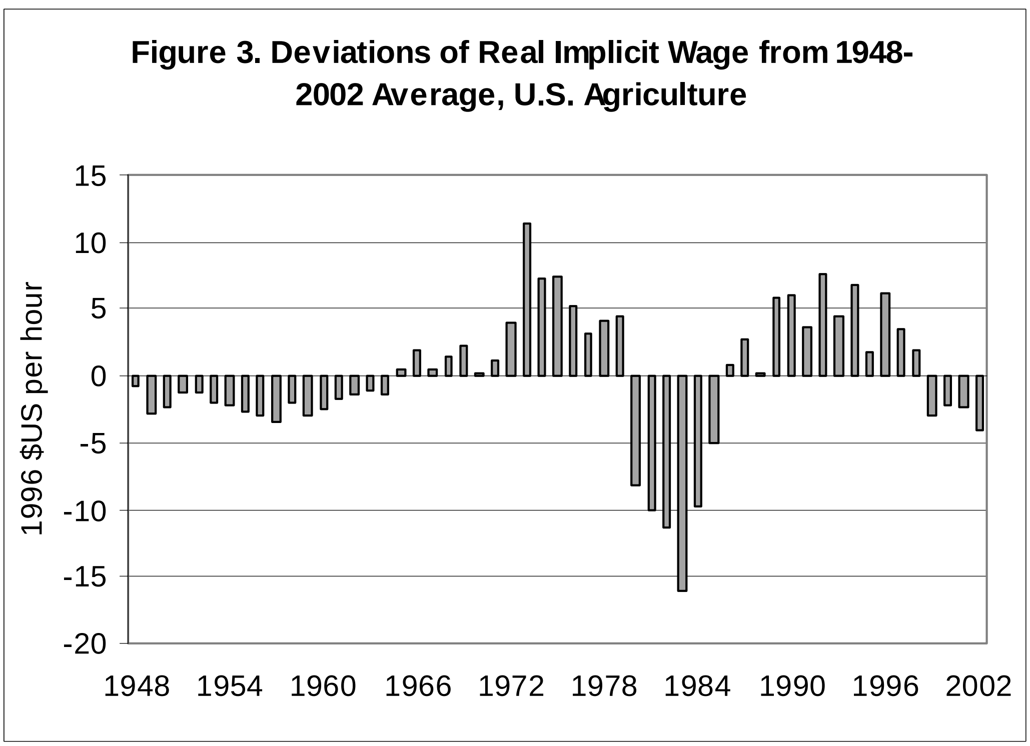
Figure 3. Deviations of Real Implicit Wage from 1948-2002 Average, U.S. Agriculture
1996 $US per hour
15
10
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1948
1954
1960
1966
1972
1978
1984
1990
1996
2002

Table 2. Decomposition of Real Implicit Wage to Operator and Unpaid Family Labour, U.S. Agriculture, 1949-2002

ALL VALUES ARE 1996 DOLLARS PER HOUR

			real implicit wage growth decomposition: average annual changes			
period/ sub-period	real implicit wage at start of period/ sub-period*	average annual change in real implicit wage** (A)	output price change component (B)	input price change component (C)	PFPG component (D)	CPI-hours factor (E)
1949-2002	7.53	-0.06	0.75	-1.36	0.64	-0.09
1949-1964	7.53	-0.03	-0.19	-0.18	0.18	0.17
1965-1979	6.98	0.39	2.68	-2.60	0.52	-0.21
1980-1985	12.83	-1.59	0.29	-3.53	1.79	-0.14
1986-1998	3.28	0.54	0.34	-0.42	0.83	-0.22
1999-2002	10.27	-1.49	-0.65	-1.31	0.63	-0.16

* This is the level in the year prior to the start of the period/sub-period. Thus, the real implicit wage at the start of the 1949-1964 sub-period is the level in 1948.

** The average annual change is average of year-over-year changes within each period/sub-period.

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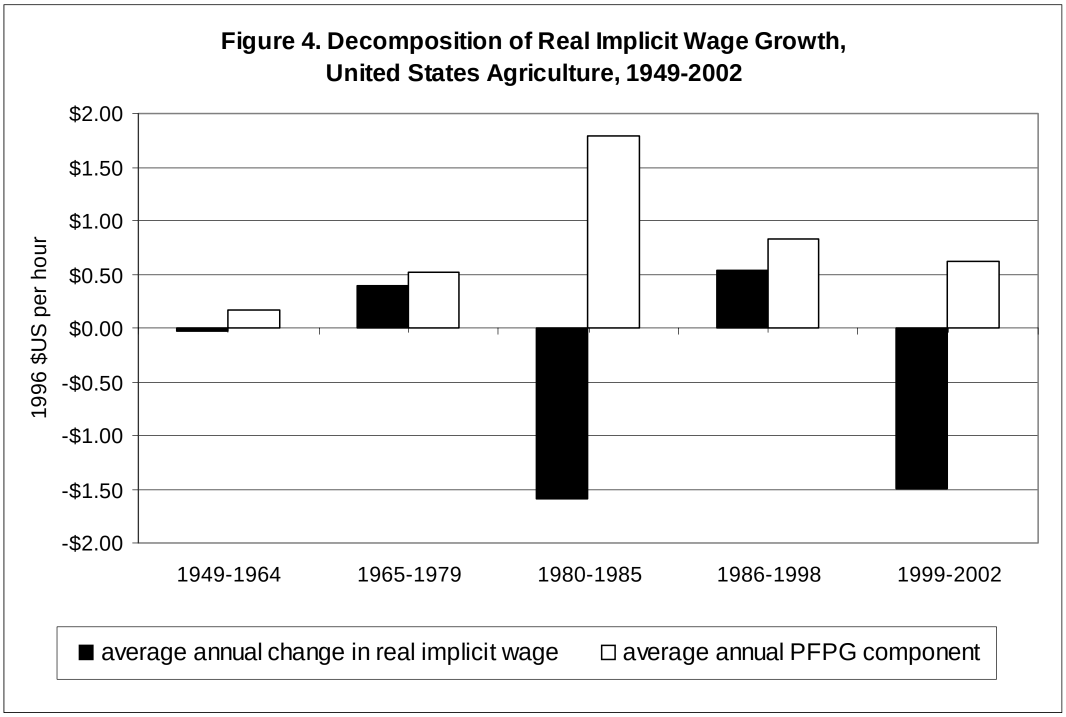
Figure 4. Decomposition of Real Implicit Wage Growth,
United States Agriculture, 1949-2002
1996 $US per hour
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-$1.50
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1949-1964
1965-1979
1980-1985
1986-1998
1999-2002
average annual change in real implicit wage
average annual PFPG component

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6 Conclusion

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References

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Table A1.1 United States Agricultural Outputs: Crops, 1948-2002

	Crops									
	1. Grain/Forage Crops		2. Industrial Crops		3. Vegetables		4. Fruits and Tree Nuts		5. Other	
Year	price index	implicit quantity	price index	implicit quantity	price index	implicit quantity	price index	implicit quantity	price index	implicit quantity
1948	0.463	29,369	0.410	13,181	0.381	8,518	0.229	4,936	0.263	2,596
1949	0.426	26,585	0.363	14,023	0.310	8,570	0.213	4,357	0.256	2,734
1950	0.383	26,677	0.444	11,108	0.284	8,666	0.276	4,310	0.239	3,178
1951	0.419	25,891	0.439	14,076	0.329	7,897	0.243	4,753	0.275	2,785
1952	0.432	28,078	0.427	14,066	0.421	8,295	0.235	4,667	0.289	2,638
1953	0.399	27,487	0.408	14,560	0.304	8,780	0.251	4,777	0.258	2,730
1954	0.406	27,380	0.407	13,826	0.292	8,177	0.245	4,985	0.255	2,653
1955	0.375	28,201	0.378	14,708	0.309	8,326	0.245	5,206	0.264	2,362
1956	0.361	28,103	0.384	14,433	0.345	8,492	0.262	5,188	0.262	2,629
1957	0.343	29,820	0.377	12,457	0.300	8,353	0.244	5,289	0.297	2,208
1958	0.347	33,967	0.378	13,724	0.304	8,594	0.285	4,897	0.271	2,470
1959	0.333	32,482	0.378	14,932	0.307	8,458	0.284	5,322	0.264	3,077
1960	0.330	35,108	0.362	15,509	0.338	8,385	0.269	5,679	0.277	3,303
1961	0.342	32,611	0.404	16,412	0.297	8,895	0.273	5,898	0.288	3,286
1962	0.389	32,818	0.389	17,111	0.308	8,625	0.262	6,021	0.272	3,707
1963	0.400	34,542	0.396	17,937	0.307	8,610	0.290	5,794	0.280	3,768
1964	0.391	32,937	0.381	17,679	0.381	8,014	0.305	5,910	0.295	3,694
1965	0.393	36,521	0.405	17,808	0.431	8,861	0.267	6,186	0.310	3,712
1966	0.442	36,499	0.445	16,102	0.382	8,957	0.274	6,369	0.327	3,671
1967	0.385	40,168	0.461	15,176	0.374	9,095	0.286	6,349	0.332	3,744
1968	0.372	39,771	0.430	17,332	0.378	9,383	0.328	6,233	0.342	3,779
1969	0.395	40,202	0.405	18,839	0.391	9,123	0.293	7,401	0.348	3,844
1970	0.424	37,390	0.448	18,059	0.395	9,253	0.295	7,015	0.350	3,977
1971	0.399	45,208	0.488	18,459	0.403	9,185	0.316	7,303	0.365	4,089
1972	0.441	43,909	0.521	20,327	0.435	9,326	0.390	6,564	0.394	4,082
1973	0.671	45,986	0.737	21,819	0.578	9,381	0.433	7,949	0.429	4,577
1974	0.878	41,523	0.968	19,126	0.711	10,017	0.422	8,144	0.456	4,329
1975	0.780	48,396	0.741	21,286	0.663	9,690	0.408	8,725	0.478	5,467
1976	0.742	48,705	0.803	20,099	0.653	10,240	0.439	8,461	0.501	5,684
1977	0.651	50,508	0.837	24,405	0.658	10,376	0.515	8,943	0.519	5,918

Table A1.1 United States Agricultural Outputs: Crops, 1948-2002

	Crops									
	1. Grain/Forage Crops		2. Industrial Crops		3. Vegetables		4. Fruits and Tree Nuts		5. Other	
Year	price index	implicit quantity	price index	implicit quantity	price index	implicit quantity	price index	implicit quantity	price index	implicit quantity
1978	0.677	52,782	0.880	24,254	0.691	10,745	0.650	8,861	0.565	7,724
1979	0.745	56,795	0.914	28,235	0.690	10,762	0.682	9,477	0.608	8,056
1980	0.852	51,700	1.007	23,411	0.776	10,642	0.635	10,319	0.633	8,649
1981	0.883	61,357	0.979	27,497	0.952	11,007	0.652	10,134	0.658	8,793
1982	0.856	61,942	0.863	27,111	0.855	11,330	0.674	10,090	0.666	9,450
1983	1.189	42,989	1.054	20,283	0.898	11,246	0.604	10,028	0.699	9,690
1984	0.963	59,276	1.045	25,232	0.948	11,906	0.676	9,958	0.703	10,950
1985	0.856	63,032	0.849	26,305	0.827	12,347	0.706	9,844	0.711	11,336
1986	0.815	58,786	0.823	22,942	0.822	12,212	0.762	9,513	0.726	12,145
1987	0.791	53,518	0.829	25,686	0.882	13,115	0.740	10,890	0.745	13,270
1988	0.931	41,787	0.999	23,464	0.890	12,522	0.772	11,696	0.779	13,727
1989	0.908	53,740	0.929	25,030	1.037	13,032	0.818	11,191	0.833	13,735
1990	0.866	58,162	0.913	27,068	0.993	13,724	0.855	11,001	0.853	14,786
1991	0.829	53,799	0.861	29,305	0.956	14,090	0.909	10,872	0.871	15,153
1992	0.827	63,196	0.844	29,717	0.930	14,624	0.894	11,355	0.881	15,791
1993	0.837	51,338	0.898	26,853	1.038	15,346	0.847	12,174	0.934	15,384
1994	0.864	63,695	0.907	33,568	0.956	17,296	0.817	12,641	0.958	15,940
1995	0.955	53,631	0.920	29,567	1.093	15,679	0.937	11,817	0.978	16,365
1996	1.000	61,108	1.000	31,650	1.000	17,072	1.000	11,904	1.000	16,669
1997	0.862	61,985	0.976	34,541	1.009	16,551	0.934	14,074	1.050	17,160
1998	0.761	63,447	0.877	32,962	1.053	16,441	0.942	12,545	1.063	17,315
1999	0.702	62,550	0.799	33,209	0.993	17,541	0.884	13,463	1.065	17,403
2000	0.707	62,678	0.827	33,062	1.036	17,779	0.877	14,292	1.059	18,539
2001	0.726	60,926	0.936	30,457	1.055	16,784	0.872	13,790	1.059	18,848
2002	0.772	56,986	0.730	32,128	1.194	16,713	0.918	14,204	1.090	18,353

Note: The base year for all price indexes is 1996. All implicit quantities are Millions of 1996 Dollars.
Source: United States Department of Agriculture (USDA), Economic Research Service (ERS)
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Table A1.2 United States Agricultural Outputs: Livestock, Other, 1948-2002

	Livestock									
	6. Meat Animals		7. Poultry and Eggs		8. Dairy		9. Misc. Livestock		Secondary Output	
Year	price index	implicit quantity	price index	implicit quantity	price index	implicit quantity	price index	implicit quantity	price index	implicit quantity
1948	0.440	19,585	0.965	3,250	0.315	16,348	0.435	577	0.118	3,069
1949	0.372	20,616	0.825	3,768	0.258	16,845	0.369	613	0.122	2,847
1950	0.403	22,074	0.691	4,110	0.254	16,904	0.401	663	0.125	2,629
1951	0.477	23,695	0.801	4,501	0.295	16,590	0.477	838	0.131	2,863
1952	0.407	24,180	0.714	4,661	0.313	16,604	0.404	692	0.136	3,147
1953	0.343	23,980	0.742	4,852	0.281	17,434	0.342	810	0.140	3,263
1954	0.342	24,984	0.582	5,174	0.258	17,712	0.341	824	0.143	3,307
1955	0.290	26,293	0.620	5,197	0.261	17,850	0.288	940	0.144	3,538
1956	0.279	25,474	0.555	5,866	0.270	18,158	0.280	1,274	0.151	3,823
1957	0.330	24,582	0.505	6,085	0.276	18,149	0.332	1,172	0.159	4,471
1958	0.398	25,152	0.518	6,470	0.273	17,966	0.395	816	0.164	5,440
1959	0.360	27,008	0.442	6,769	0.276	17,798	0.358	1,043	0.172	8,220
1960	0.344	26,392	0.463	7,105	0.280	17,982	0.344	1,298	0.177	8,821
1961	0.351	27,520	0.417	7,695	0.282	18,387	0.350	1,182	0.180	8,651
1962	0.363	28,016	0.426	7,652	0.275	18,483	0.362	1,196	0.183	8,425
1963	0.338	29,470	0.428	7,809	0.276	18,339	0.338	1,300	0.186	8,680
1964	0.314	30,297	0.418	8,091	0.280	18,616	0.316	1,488	0.191	7,842
1965	0.368	28,784	0.429	8,359	0.286	18,214	0.366	1,111	0.198	7,890
1966	0.423	29,795	0.469	8,843	0.324	17,590	0.422	1,070	0.208	7,671
1967	0.395	31,165	0.390	9,277	0.339	17,427	0.393	995	0.219	7,958
1968	0.404	31,595	0.423	8,980	0.355	17,213	0.403	1,061	0.230	7,439
1969	0.464	31,693	0.477	9,184	0.372	17,057	0.462	883	0.243	7,020
1970	0.480	33,573	0.444	9,569	0.387	17,198	0.477	766	0.259	6,135
1971	0.466	34,034	0.406	9,741	0.398	17,441	0.464	789	0.280	6,204
1972	0.573	34,329	0.417	10,027	0.411	17,660	0.572	825	0.291	6,070
1973	0.734	35,652	0.713	9,686	0.484	16,989	0.733	798	0.321	6,491
1974	0.634	34,699	0.639	9,731	0.564	17,008	0.632	780	0.374	6,271
1975	0.662	31,498	0.714	9,535	0.592	16,978	0.659	832	0.408	6,497
1976	0.668	32,915	0.704	10,164	0.654	17,691	0.668	909	0.439	6,421
1977	0.658	33,099	0.696	10,356	0.658	18,064	0.657	1,195	0.484	6,385

Table A1.2 United States Agricultural Outputs: Livestock, Other, 1948-2002

	Livestock									
	6. Meat Animals		7. Poultry and Eggs		8. Dairy		9. Misc. Livestock		Secondary Output	
Year	price index	implicit quantity	price index	implicit quantity	price index	implicit quantity	price index	implicit quantity	price index	implicit quantity
1978	0.881	32,921	0.747	10,852	0.718	17,893	0.879	1,026	0.524	7,044
1979	1.071	33,676	0.763	11,698	0.812	18,183	1.067	1,075	0.591	7,020
1980	0.994	34,939	0.773	11,847	0.870	18,944	0.990	1,271	0.663	6,159
1981	0.964	34,842	0.808	12,313	0.930	19,591	0.960	1,453	0.740	5,189
1982	0.993	33,525	0.772	12,331	0.918	19,984	0.987	1,656	0.756	8,128
1983	0.947	34,065	0.803	12,424	0.883	20,593	0.945	1,999	0.781	8,497
1984	0.959	33,379	0.961	12,747	0.874	19,870	0.958	2,174	0.799	8,207
1985	0.912	33,315	0.841	13,327	0.853	21,070	0.910	2,315	0.771	9,531
1986	0.930	33,254	0.916	13,868	0.820	21,092	0.929	2,324	0.748	9,099
1987	1.057	33,667	0.763	15,085	0.833	21,047	1.056	2,292	0.790	10,699
1988	1.073	34,364	0.832	15,447	0.826	21,395	1.070	2,389	0.839	13,221
1989	1.103	34,309	0.956	16,083	0.913	21,239	1.097	2,351	0.875	14,371
1990	1.233	34,147	0.893	17,119	0.927	21,812	1.224	2,152	0.887	14,462
1991	1.189	35,201	0.848	17,860	0.826	21,809	1.182	2,241	0.880	15,252
1992	1.105	35,543	0.831	18,696	0.882	22,291	1.100	2,651	0.886	14,919
1993	1.176	35,386	0.890	19,512	0.861	22,269	1.171	2,664	0.912	15,640
1994	1.019	36,423	0.903	20,475	0.874	22,721	1.021	3,359	0.922	15,675
1995	0.966	36,771	0.897	21,267	0.860	22,981	0.965	3,644	0.932	17,384
1996	1.000	35,361	1.000	22,455	1.000	22,795	1.000	3,610	1.000	15,970
1997	1.079	35,663	0.970	22,950	0.908	23,112	1.075	3,337	0.988	17,699
1998	0.917	36,703	0.982	23,374	1.037	23,295	0.913	4,063	0.917	19,961
1999	0.929	37,282	0.938	24,413	0.964	24,104	0.925	4,211	0.889	21,330
2000	1.054	37,522	0.879	24,826	0.831	24,842	1.048	3,943	0.897	20,005
2001	0.769	39,928	0.974	25,202	1.008	24,529	0.767	5,062	0.926	20,874
2002	0.951	37,738	0.804	26,179	0.817	25,174	0.950	4,079	0.943	20,518

Note: The base year for all price indexes is 1996. All implicit quantities are Millions of 1996 Dollars.
Source: United States Department of Agriculture (USDA), Economic Research Service (ERS)
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Table A2. United States Agricultural Inputs and Consumer Price Index, 1948-2002

	1. Capital excl. Land		2. Land		3. Hired Labour		4. Farm-Produced Inputs		5. Purchased Materials		6. Purchased Services		7. Operator/Unpaid	
	price	implicit	real rate	constant $ value	price	implicit	price	implicit	price	implicit	price	implicit	Family Labour	CPI
Year	index	quantity	of return	(Million $1996)	index	quantity	index	quantity	index	quantity	index	quantity	(million hours)	1996=1
1948	0.110	18,898	0.09%	827,770	0.166	18,144	0.413	17,408	0.276	21,179	0.147	13,889	17,920	0.154
1949	0.110	21,503	0.07%	830,622	0.167	16,857	0.374	19,825	0.260	24,027	0.147	13,516	17,766	0.152
1950	0.109	23,939	0.07%	832,605	0.161	17,574	0.328	18,938	0.259	25,598	0.147	14,060	16,439	0.154
1951	0.122	26,135	0.08%	833,482	0.172	16,968	0.372	18,630	0.278	27,860	0.158	15,416	15,574	0.166
1952	0.126	26,716	0.08%	833,014	0.174	16,579	0.389	18,810	0.293	27,844	0.159	16,450	14,812	0.169
1953	0.129	28,812	0.11%	831,065	0.171	16,105	0.344	19,012	0.264	28,675	0.168	15,633	13,707	0.170
1954	0.125	29,969	0.11%	827,271	0.173	15,184	0.351	17,648	0.280	27,650	0.170	15,219	13,315	0.171
1955	0.128	30,515	0.12%	821,155	0.175	14,923	0.327	18,053	0.244	32,030	0.172	15,892	13,538	0.171
1956	0.139	30,902	0.16%	812,885	0.191	13,627	0.314	18,349	0.234	33,492	0.180	16,550	12,892	0.173
1957	0.158	30,579	0.26%	803,337	0.209	13,073	0.295	18,718	0.230	35,005	0.187	16,774	11,858	0.179
1958	0.165	30,405	0.30%	794,053	0.220	13,169	0.295	20,904	0.246	35,120	0.188	17,725	10,996	0.184
1959	0.177	30,672	0.35%	786,953	0.232	12,854	0.283	20,782	0.244	36,443	0.191	20,811	11,007	0.185
1960	0.179	31,033	0.38%	783,372	0.243	12,856	0.292	19,784	0.232	37,927	0.194	20,252	10,629	0.189
1961	0.180	30,851	0.38%	782,157	0.251	12,797	0.272	19,758	0.250	36,902	0.196	19,907	10,060	0.191
1962	0.182	30,781	0.39%	781,634	0.263	12,776	0.304	20,125	0.253	38,972	0.199	20,075	9,752	0.192
1963	0.183	31,021	0.38%	780,536	0.270	12,754	0.325	20,916	0.261	40,812	0.201	19,832	9,344	0.195
1964	0.183	31,442	0.39%	778,014	0.304	11,502	0.315	20,345	0.258	41,969	0.206	19,117	8,836	0.198
1965	0.188	31,820	0.41%	773,413	0.332	10,828	0.316	19,229	0.265	42,389	0.210	19,478	8,628	0.201
1966	0.191	32,716	0.41%	766,786	0.371	9,754	0.363	21,078	0.277	44,675	0.215	19,646	8,042	0.207
1967	0.203	33,693	0.51%	758,268	0.404	9,062	0.324	20,116	0.277	47,371	0.225	20,442	7,578	0.213
1968	0.200	34,933	0.48%	748,054	0.433	8,770	0.300	20,731	0.268	48,539	0.235	19,967	7,204	0.222
1969	0.212	35,543	0.57%	736,456	0.458	8,846	0.317	20,730	0.262	52,757	0.247	19,282	6,942	0.234
1970	0.243	35,925	0.82%	724,018	0.476	8,914	0.342	20,721	0.274	55,160	0.262	18,376	6,755	0.247
1971	0.251	36,244	0.87%	711,836	0.482	8,815	0.344	20,096	0.283	55,583	0.281	18,316	6,592	0.258
1972	0.261	36,754	0.94%	701,186	0.499	8,779	0.361	21,722	0.292	56,419	0.292	18,226	6,494	0.266
1973	0.293	37,347	1.22%	693,341	0.580	8,909	0.553	21,807	0.392	58,437	0.312	19,432	6,478	0.283
1974	0.333	38,988	1.38%	689,517	0.637	9,482	0.779	21,135	0.480	58,959	0.350	19,453	5,705	0.314
1975	0.310	40,234	1.00%	690,259	0.680	9,630	0.723	20,193	0.556	51,438	0.389	19,686	5,625	0.343
1976	0.320	41,178	1.03%	693,645	0.756	9,738	0.723	21,126	0.568	55,080	0.414	20,805	5,482	0.363
1977	0.371	42,109	1.63%	697,218	0.829	9,499	0.642	20,316	0.588	53,696	0.448	21,276	5,302	0.386
1978	0.414	43,123	2.10%	698,518	0.914	8,932	0.623	23,160	0.599	60,123	0.486	24,742	5,057	0.416
1979	0.494	43,948	2.78%	695,867	0.957	9,268	0.692	24,396	0.677	62,922	0.537	26,058	4,809	0.463
1980	0.644	45,867	4.43%	690,287	1.000	9,190	0.820	25,519	0.779	63,153	0.598	23,474	4,676	0.525

Table A2. United States Agricultural Inputs and Consumer Price Index, 1948-2002

	1. Capital excl. Land		2. Land		3. Hired Labour		4. Farm-Produced Inputs		5. Purchased Materials		6. Purchased Services		7. Operator/Unpaid	
	price	implicit	real rate	constant $ value	price	implicit	price	implicit	price	implicit	price	implicit	Family Labour	CPI
Year	index	quantity	of return	(Million $1996)	index	quantity	index	quantity	index	quantity	index	quantity	(million hours)	1996=1
1981	0.830	45,372	6.41%	683,459	0.982	9,148	0.853	23,570	0.838	60,266	0.663	22,296	4,734	0.579
1982	0.858	44,784	6.55%	677,036	1.218	8,209	0.832	25,233	0.808	57,235	0.690	24,238	4,635	0.615
1983	0.914	43,752	6.82%	672,248	1.063	9,068	1.008	26,172	0.821	57,307	0.699	23,842	4,332	0.635
1984	1.005	41,757	7.18%	668,760	1.148	8,448	0.865	21,536	0.824	58,989	0.721	22,909	4,393	0.662
1985	0.912	40,933	5.46%	665,889	1.336	7,357	0.787	22,144	0.768	56,175	0.723	23,464	4,184	0.686
1986	0.819	38,537	3.96%	662,993	1.295	7,094	0.653	21,029	0.713	58,810	0.721	21,703	3,826	0.699
1987	0.865	36,291	4.11%	659,500	1.298	7,254	0.606	19,949	0.728	57,663	0.754	22,373	3,752	0.724
1988	0.905	35,021	4.02%	655,061	1.399	7,621	0.831	18,982	0.802	59,026	0.795	22,504	3,825	0.754
1989	0.907	33,984	3.66%	650,162	1.644	6,996	0.860	16,678	0.838	58,987	0.839	24,066	3,910	0.790
1990	0.940	33,335	3.98%	645,518	1.907	7,105	0.831	19,026	0.833	62,060	0.866	23,132	3,812	0.833
1991	0.924	33,000	3.87%	641,963	1.868	7,151	0.774	19,319	0.832	63,414	0.873	24,270	3,845	0.868
1992	0.904	32,152	3.76%	640,331	1.953	6,718	0.758	18,553	0.830	62,905	0.887	23,570	3,666	0.894
1993	0.919	31,482	3.91%	641,154	2.171	6,592	0.803	18,402	0.836	65,403	0.918	26,559	3,495	0.921
1994	0.965	30,523	4.12%	643,566	2.222	6,553	0.838	18,563	0.869	66,788	0.934	27,586	3,558	0.945
1995	0.996	30,228	4.40%	646,468	2.309	7,165	0.877	19,192	0.894	69,042	0.960	28,748	3,606	0.971
1996	1.000	29,348	4.58%	648,924	2.553	6,493	1.000	17,415	1.000	65,564	1.000	27,647	3,623	1.000
1997	1.030	29,186	4.90%	650,124	2.570	6,833	0.965	17,838	0.972	70,494	1.004	29,291	3,576	1.023
1998	1.014	28,983	4.71%	649,616	2.683	6,960	0.839	18,237	0.880	75,729	0.990	30,859	3,402	1.039
1999	1.123	28,885	6.11%	647,387	2.664	7,299	0.733	19,133	0.851	76,910	0.993	31,742	3,479	1.062
2000	1.159	28,678	6.38%	643,767	2.537	6,921	0.745	18,356	0.904	73,532	1.035	29,980	3,404	1.098
2001	1.119	28,622	5.77%	639,096	2.725	6,854	0.823	17,256	0.934	73,487	1.069	30,630	3,359	1.129
2002	1.134	28,698	5.99%	633,771	2.844	6,837	0.864	16,864	0.929	74,518	1.084	28,613	3,330	1.147

Note 1: The base year for all price indexes is 1996. All implicit quantities are Millions of 1996 Dollars.

Input Data Source: United States Department of Agriculture (USDA), Economic Research Service (ERS)

Input Data Contact: Eldon Ball, USDA, ERS, Resource Economics Division, Room N4086, 1800 M Street NW, Washington DC, 20036. Telephone: 202-694-5601 ; email: eball@ers.usda.gc

CPI Source: United States Department of Labor, Bureau of Labour Statistics (BLS)

Note 2: CPI data data obtained by following the menu starting from http://stats.bls.gov/cpi/home.htm#data. The specifics of the series are:

Series Id CUUR0000SA0, Not Seasonally Adjusted, U.S. city average, All items, Base Period: 1982-84=100

Table B1. Decomposition of Real Implicit Wage to Operator and Unpaid Family Labour, U.S. Agriculture, 1949-2002

ALL VALUES ARE 1996 DOLLARS PER HOUR

			implicit wage growth decomposition*			
year	real implicit wage per hour	change in real implicit wage* (A)	output price growth component (B)	input price growth component (C)	productivity growth component (D)	CPI-hours factor (E)
1948	7.53	-	-	-	-	
1949	5.55	-1.98	-1.94	0.43	-0.63	0.16
1950	6.03	0.48	-0.01	0.41	-0.29	0.37
1951	7.05	1.01	1.60	-0.81	0.36	-0.13
1952	7.04	-0.01	-0.34	-0.33	0.44	0.22
1953	6.36	-0.68	-1.80	0.52	0.09	0.51
1954	6.19	-0.17	-0.51	-0.23	0.43	0.14
1955	5.60	-0.59	-0.98	0.55	-0.08	-0.08
1956	5.40	-0.19	-0.17	-0.22	0.00	0.19
1957	4.85	-0.55	0.10	-0.60	-0.33	0.28
1958	6.26	1.41	1.04	-0.61	0.75	0.24
1959	5.34	-0.92	-0.92	-0.30	0.35	-0.05
1960	5.82	0.48	-0.16	-0.15	0.69	0.10
1961	6.63	0.81	0.37	-0.24	0.41	0.27
1962	7.00	0.37	0.85	-0.59	-0.04	0.14
1963	7.21	0.21	-0.01	-0.47	0.48	0.21
1964	6.98	-0.23	-0.29	-0.11	-0.14	0.32
1965	8.87	1.88	1.52	-0.60	0.91	0.05
1966	10.16	1.29	2.99	-1.27	-0.81	0.38
1967	8.83	-1.33	-1.98	-0.52	0.88	0.30
1968	9.76	0.93	0.18	0.48	0.19	0.09
1969	10.59	0.82	1.98	-0.95	-0.04	-0.16
1970	8.47	-2.11	1.54	-2.70	-0.66	-0.30
1971	9.44	0.97	-0.33	-0.96	2.41	-0.15
1972	12.32	2.89	4.39	-1.19	-0.16	-0.16
1973	19.67	7.34	14.61	-7.74	1.16	-0.69
1974	15.64	-4.03	6.99	-7.75	-3.72	0.45
1975	15.67	0.04	-3.70	-0.34	5.18	-1.10
1976	13.51	-2.16	0.57	-1.23	-1.03	-0.47

Table B1. Decomposition of Real Implicit Wage to Operator and Unpaid Family Labour, U.S. Agriculture, 1949-2002

ALL VALUES ARE 1996 DOLLARS PER HOUR

			implicit wage growth decomposition*			
year	real implicit wage per hour	change in real implicit wage* (A)	output price growth component (B)	input price growth component (C)	productivity growth component (D)	CPI-hours factor (E)
1977	11.50	-2.01	-1.47	-3.50	3.35	-0.39
1978	12.38	0.88	6.53	-3.32	-2.04	-0.29
1979	12.83	0.45	6.35	-7.36	2.15	-0.69
1980	0.06	-12.76	3.18	-12.09	-2.65	-1.20
1981	-1.81	-1.88	1.53	-10.17	6.77	-0.01
1982	-3.02	-1.21	-1.80	-0.90	1.42	0.07
1983	-7.70	-4.68	7.41	-3.07	-8.91	-0.11
1984	-1.38	6.32	-2.76	-1.50	10.16	0.42
1985	3.28	4.66	-5.80	6.52	3.96	-0.02
1986	9.18	5.90	-0.63	7.54	-1.25	0.24
1987	10.96	1.78	0.95	-1.27	2.24	-0.15
1988	8.52	-2.43	4.79	-3.87	-2.72	-0.64
1989	14.19	5.67	1.87	-1.04	5.40	-0.57
1990	14.38	0.20	0.47	-1.53	1.64	-0.38
1991	11.96	-2.42	-2.37	0.77	-0.12	-0.70
1992	15.91	3.95	-0.97	0.26	4.45	0.22
1993	12.77	-3.15	2.43	-1.53	-4.34	0.30
1994	15.18	2.42	-1.47	-1.89	6.32	-0.54
1995	10.11	-5.07	2.10	-1.85	-4.70	-0.62
1996	14.44	4.33	3.48	-3.72	4.90	-0.33
1997	11.81	-2.64	-2.49	-0.17	0.16	-0.14
1998	10.27	-1.53	-3.71	2.90	-1.14	0.42
1999	5.30	-4.97	-2.94	-2.13	0.55	-0.45
2000	6.21	0.91	0.63	-2.01	2.34	-0.06
2001	5.93	-0.28	-0.01	-0.21	0.03	-0.09
2002	4.30	-1.63	-0.27	-0.90	-0.42	-0.04
average 1948-2002	8.31	-0.06	0.75	-1.36	0.64	-0.09

* Note that these are all changes in relative to the previous year.