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APPENDIX A

NATIONAL INCOME AND AGGREGATE INCOME PAYMENTS TO INDIVIDUALS BY TYPE OF INCOME AND INDUSTRIAL BRANCH, BASIC AND OTHER VARIANTS

APPENDIX A presents in detail the estimates upon which the summary tables and measures in the text are based, as well as other variants of these measures not considered basic and not utilized in the discussion.

The basic variant, so far as the available data admit of its measurement in strict conformity with the concepts established, is presented in Appendix Table I. In this variant, the aggregate of income payments to individuals is the sum of employees' compensation, entrepreneurial withdrawals, and individuals' receipts of net rents (paid and imputed), dividends and interest. Net business savings, as reported in the accounts of business concerns, are in this variant adjusted for: (a) gains and losses on the sale of capital assets; (b) that element of revaluation of inventories which is retained, under usual accounting procedures, in net profit or loss after payment of dividends; (c) the difference between depreciation and depletion at book value and at reproduction prices. However, gains and losses on the sale of capital assets could be excluded only since 1929; the adjustment of net savings for the effect of changing inventory valuation is not complete in any industrial branch, and could not be made even in its usual form in the subdivisions of the transportation and other public utilities and the finance groups; and the adjustment (c), an attempt to use a theoretically appropriate measure of capital consumption, could be made only for the economic system as a whole, not by industrial branches. For these reasons and in these respects, even the basic variant, presented in Appendix Table I, departs from the theoretical concept of national income.

Since opinions differ concerning the limits of such concepts as aggregate income payments to individuals and national income, and since the accounting measures of net business savings have an interest of their own, we present in Appendix Table II measures of other variants of total national income and of some of its components. These variants are of two distinct types. One is suggested by the general difficulty of distinguishing between entrepreneurial withdrawals and the net savings of entrepreneurs. It may be and has been argued that in the case of unincorporated enterprises, unlike corporations, no significant difference exists between the amount that the entrepreneur withdraws for his consumption or for his individual savings and the amount retained in the business. While this argument does not appear to us theoretically tenable, there is much to be said on practical grounds for measuring only entrepreneurial income and not concerning oneself with entrepreneurial withdrawals as a distinct magnitude. If this is done, entrepreneurial *income* and not entrepreneurial withdrawals enters aggregate income payments to individuals; a new variant of aggregate income payments appears; and net business savings are confined to savings of business corporations. The resulting measures appear in Appendix Table II under the general heading *Adjusted*.

The second group of variants results from the acceptance of the accounting measures of net business savings and the consequent omission of all the adjustments listed and discussed above. If aggregate income payments to individuals include entrepreneurial withdrawals alone, they are not affected by decisions concerning the treatment of net business savings. But if entrepreneurial income, rather than withdrawals, is included, the acceptance of accounting measures of business savings affects also aggregate income payments. For this reason, the entries in Appendix Table II under the general heading *Unadjusted* include not only the new variants of total business savings and hence of national income, but also of aggregate income payments to individuals and of the complementary item, savings of business corporations.

Finally, since business gains and losses on the sale of capital assets are measurable only since 1929, and the adjustment for them affects the continuity of the series, this item is presented separately in Appendix Table III with a distinction between individually owned firms and corporations.

For the various industrial branches distinguished, the number of variants in Appendix Table II

Appendix Table I

NATIONAL INCOME AND AGGREGATE INCOME PAYMENTS TO INDIVIDUALS BY INDUSTRIAL BRANCHES, BASIC VARIANT, 1919-1934

(millions of dollars)

1. Agriculture

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Wages[1]	1,492	1,713	1,097	1,068	1,208	1,189	1,236	1,282	1,295	1,304	1,313	1,112	807	523	484	518
Withdrawals by farm operators	6,648	7,659	5,104	4,882	5,415	5,506	5,559	5,668	5,626	5,614	5,649	5,132	4,084	3,172	3,005	3,356
Interest on mortgages (incl. small amount of dividends)	340	385	391	400	399	399	402	401	412	410	392	373	367	346	324	278
All income payments to individuals	8,480	9,757	6,592	6,350	7,022	7,094	7,197	7,351	7,333	7,328	7,354	6,617	5,258	4,041	3,813	4,152
Net business savings	2,756	-771	-366	-522	-332	231	572	-57	-134	-46	-123	-1,107	-1,770	-1,859	-733	124
Income originating	11,236	8,986	6,226	5,828	6,690	7,325	7,769	7,294	7,199	7,282	7,231	5,510	3,488	2,182	3,080	4,276

[1] Includes board and perquisites.

2. Mining

Wages	1,393	1,992	1,448	1,339	1,932	1,616	1,507	1,758	1,546	1,367	1,405	1,173	805	529	533	708
Salaries	156	223	150	161	200	191	197	225	218	201	226	226	183	134	129	169
Employees' compensation	1,548	2,215	1,598	1,500	2,133	1,806	1,704	1,983	1,765	1,568	1,631	1,399	987	663	662	877
Dividends	195	210	193	139	223	213	269	327	278	253	365	249	138	82	75	183
Interest	23	30	38	33	37	51	54	47	44	42	42	43	43	41	39	36
Property income	218	240	231	172	261	264	323	373	322	295	407	292	181	122	114	219
Withdrawals by entrepreneurs	30	39	32	31	34	29	27	26	25	23	21	20	18	14	14	15
All income payments to individuals	1,796	2,494	1,861	1,703	2,428	2,099	2,054	2,382	2,111	1,886	2,059	1,712	1,186	799	790	1,111
Net business savings	36	14	-152	-273	-245	-289	-100	-95	-166	-167	-166	-241	-314	-296	-287	-105
Income originating	1,832	2,508	1,709	1,430	2,183	1,810	1,954	2,288	1,945	1,719	1,893	1,471	872	503	503	1,007

3. Manufacturing

Wages	9,682	11,587	7,460	7,990	10,160	9,494	9,981	10,318	10,115	10,201	10,899	8,842	6,701	4,636	4,940	6,304
Salaries	2,786	3,114	2,431	2,474	2,862	2,895	2,979	3,229	3,424	3,665	4,013	3,866	3,206	2,424	2,205	2,612
Employees' compensation	12,468	14,701	9,892	10,464	13,022	12,389	12,960	13,547	13,539	13,866	14,912	12,708	9,908	7,060	7,145	8,916
Dividends	1,262	1,489	1,325	1,311	1,764	1,653	1,911	2,119	2,228	2,509	2,578	2,618	1,897	1,117	1,011	1,217
Interest	86	108	138	106	118	155	154	152	154	185	212	237	238	209	193	178
Property income	1,348	1,596	1,464	1,417	1,882	1,807	2,065	2,271	2,383	2,695	2,790	2,856	2,134	1,326	1,203	1,395
Withdrawals by entrepreneurs	475	483	377	375	358	356	358	350	338	333	333	300	246	181	167	198
All income payments to individuals	14,292	16,780	11,732	12,255	15,262	14,553	15,383	16,168	16,260	16,893	18,035	15,864	12,288	8,567	8,516	10,509
Net business savings	1,879	3,126	895	824	1,523	1,045	1,450	1,983	925	1,033	1,793	314	-1,290	-2,320	-1,872	-695
Income originating	16,171	19,907	12,627	13,079	16,784	15,598	16,833	18,151	17,186	17,927	19,828	16,179	10,997	6,248	6,644	9,814

4. Construction

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Wages and salaries	1,235	1,759	1,288	1,535	2,230	2,243	2,232	2,540	2,456	2,567	2,521	2,159	1,415	643	542	638
Dividends	15	21	32	30	37	32	58	41	47	51	62	83	39	21	19	15
Interest	4.2	5.0	7.8	4.2	5.5	7.3	9.9	11	11	9.5	13	15	13	10	8.7	8.4
Property income	19	26	40	34	43	39	68	52	58	61	74	98	52	31	27	23
Withdrawals by entrepreneurs	287	308	295	406	383	420	552	359	395	435	436	261	176	159	225	276
All income payments to individuals	1,541	2,093	1,623	1,975	2,657	2,702	2,852	2,951	2,909	3,063	3,031	2,518	1,644	833	794	938
Net business savings	-40	165	272	-64	-40	189	103	178	220	37	60	128	44	-125	-289	-143
Income originating	1,501	2,258	1,895	1,910	2,617	2,892	2,955	3,128	3,129	3,100	3,091	2,646	1,688	708	506	795

5. Transportation and Other Public Utilities

a. Electric Light and Power and Manufactured Gas

Wages and salaries	217	261	263	274	346	400	415	464	480	508	533	528	473	379	350	376
Dividends	112	111	112	149	201	241	287	302	339	430	514	605	609	520	431	379
Interest	93	101	112	130	158	194	218	254	278	307	318	340	371	404	407	370
Property income	205	212	224	279	358	435	505	556	617	738	832	944	980	924	839	749
Withdrawals by entrepreneurs	4.0	4.0	3.7	3.2	2.8	2.6	2.3	1.9	1.5	1.4	1.2	1.0	0.8	0.6	0.6	0.5
All income payments to individuals	426	477	491	556	707	837	922	1,022	1,098	1,247	1,367	1,474	1,453	1,304	1,189	1,126
Net business savings[1] [2]	-1.3	19	33	64	72	43	148	132	150	160	197	141	49	-43	-43	-35
Income originating[1] [2]	425	496	524	620	778	880	1,070	1,154	1,248	1,407	1,564	1,614	1,503	1,262	1,146	1,091

b. Steam Railroads, Pullman and Express

Wages, including gratuities[3]	2,462	3,215	2,269	2,116	2,472	2,289	2,324	2,403	2,346	2,264	2,332	1,998	1,584	1,122	1,060	1,165
Salaries[3]	675	865	819	837	870	871	877	893	900	892	895	852	749	564	501	525
Compensation for injuries and pensions[4]	49	73	46	49	59	60	72	77	78	72	74	72	67	59	58	62
Employees' compensation[4]	3,186	4,152	3,135	3,002	3,401	3,220	3,272	3,373	3,324	3,228	3,301	2,922	2,400	1,745	1,619	1,751
Dividends	257	236	209	226	253	277	295	337	437	367	439	435	257	75	76	121
Interest	436	461	477	489	501	525	537	528	528	528	520	535	536	531	478	461
Property income	693	698	685	714	753	802	832	865	965	894	959	970	793	606	554	582
All income payments to individuals	3,879	4,850	3,820	3,716	4,155	4,023	4,104	4,238	4,289	4,122	4,260	3,892	3,193	2,351	2,173	2,333
Net business savings[1]	58	-6.5	-5.2	106	282	243	382	429	176	359	393	-22	-219	-261	-52	-111
Income originating[1]	3,937	4,844	3,814	3,822	4,437	4,265	4,486	4,667	4,465	4,482	4,653	3,870	2,974	2,090	2,122	2,222

c. Other Transportation (Pipe Lines, Street Railways and Water Transportation)

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Wages and salaries	937	1,262	1,048	963	995	1,027	1,007	1,034	1,001	998	1,007	941	805	632	579	628
Dividends	102	78	67	104	93	89	116	103	122	127	143	160	125	133	56	49
Interest	122	121	128	139	145	138	125	114	105	105	104	104	103	104	102	98
Property income	224	199	194	242	239	227	241	217	227	232	247	264	228	237	158	148
Withdrawals by entrepreneurs	9.7	6.7	4.7	4.8	4.7	3.5	4.2	4.3	4.0	4.6	4.6	4.6	3.3	2.3	1.8	2.0
All income payments to individuals	1,171	1,467	1,247	1,210	1,239	1,257	1,252	1,256	1,231	1,235	1,258	1,209	1,036	872	738	778
Net business savings[1]	44	70	3.0	3.3	35	33	33	38	14	31	42	-66	-75	-127	-31	-37
Income originating[1]	1,215	1,538	1,250	1,213	1,274	1,291	1,285	1,293	1,245	1,266	1,299	1,143	961	745	707	740

d. Communication

Wages and salaries	307	404	402	426	471	504	527	567	586	625	702	710	635	529	455	477
Pensions and benefits	4.1	5.4	5.4	6.0	6.1	6.0	6.6	7.2	7.6	8.3	9.3	9.6	11	10	9.9	11
Employees' compensation	311	409	408	432	477	510	534	574	593	634	711	719	646	540	465	489
Dividends	51	51	58	70	81	92	103	112	125	130	146	171	188	191	188	187
Interest	29	33	36	29	32	33	41	41	42	37	36	34	37	48	50	51
Property income	80	84	94	99	113	125	144	153	167	167	181	204	225	239	238	238
All income payments to individuals	391	493	502	532	590	634	677	728	760	801	892	924	871	779	703	727
Net business savings[1]	26	21	30	47	47	43	69	76	81	102	109	46	12	-54	-67	-59
Income originating[1]	417	514	532	578	636	677	746	804	841	902	1,001	970	883	724	636	667

e. Total

All income payments to individuals	5,867	7,287	6,059	6,014	6,690	6,751	6,956	7,243	7,378	7,405	7,777	7,498	6,554	5,306	4,803	4,964
Net business savings	122	174	311	214	399	376	668	691	460	638	736	217	-159	-445	-220	-310
Income originating	5,989	7,461	6,371	6,228	7,089	7,127	7,624	7,934	7,838	8,043	8,513	7,715	6,395	4,860	4,583	4,654

[1]Not adjusted for gains and losses on inventory holdings.

[2]The figures for the electric light and power industry are based on Census data and are for operating companies alone. Their profits and losses from the sale of capital assets cannot be estimated.

[3]Owing to the reclassification of railroad employees, the 1932-34 figures are not strictly comparable with those for the earlier years. Comparable 1929-31 figures, in millions of dollars are:

	1929	1930	1931
Wages	2,347	2,011	1,596
Salaries	880	838	737

[4]Including compensation for injuries to persons other than employees.

6. Trade

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Wages and salaries	5,403	6,021	5,138	5,641	6,337	6,471	6,916	7,341	7,171	7,359	7,797	7,431	6,448	4,967	4,363	4,822
Dividends	401	382	320	302	369	390	440	471	495	499	566	497	386	214	179	214
Interest	33	42	40	39	22	31	31	25	31	43	56	59	66	61	49	45
Property income	434	424	360	341	391	420	471	496	526	542	621	556	452	275	228	260
Withdrawals by entrepreneurs	2,197	2,595	2,177	2,050	2,073	2,138	2,091	2,134	2,109	2,128	2,232	2,191	2,026	1,774	1,648	1,667
All income payments to individuals	8,034	9,039	7,676	8,032	8,802	9,029	9,478	9,970	9,807	10,030	10,650	10,178	8,926	7,016	6,239	6,749
Net business savings	2,081	2,548	2,017	530	1,290	713	605	1,516	658	866	527	723	-137	-1,010	-1,393	-930
Income originating	10,115	11,587	9,692	8,562	10,091	9,742	10,082	11,486	10,465	10,895	11,177	10,901	8,789	6,006	4,846	5,819

7. Finance

a. Banking

Wages and salaries	362	452	495	492	520	550	573	607	642	673	698	679	605	516	453	455
Dividends paid	265	286	300	315	312	313	329	342	370	381	467	450	411	280	158	177
All income payments to individuals	627	738	795	808	832	863	903	948	1,012	1,054	1,165	1,128	1,016	796	611	632
Net business savings[1]	224	200	107	85	106	139	197	197	180	237	151	-2.5	-231	-280	-204	-160
Income originating[1]	852	938	902	893	938	1,002	1,100	1,145	1,192	1,290	1,316	1,126	786	516	407	472

b. Insurance

Wages and salaries	540	656	680	698	802	898	995	1,078	1,143	1,210	1,286	1,284	1,194	1,014	921	969
Dividends[2]	21	22	26	49	44	37	43	48	56	62	70	61	61	31	16	28
Interest	-51	-63	-70	-73	-74	-82	-83	-81	-85	-90	-83	-82	-88	-82	-78	-87
Property income	-30	-42	-45	-24	-31	-45	-40	-33	-29	-28	-13	-21	-27	-51	-62	-59
All income payments to individuals	510	615	635	674	771	854	955	1,045	1,114	1,182	1,273	1,263	1,167	963	859	911
Net business savings[1]	46	-62	-85	-93	-103	-106	-48	-45	36	101	20	-85	-100	-75	-29	-30
Income originating[1]	556	553	550	581	668	748	906	1,000	1,150	1,283	1,293	1,178	1,066	888	830	881

c. Real Estate

Wages and salaries	611	652	617	599	651	698	642	752	862	981	1,115	896	753	568	501	569
Dividends	52	103	89	124	202	182	218	211	202	206	238	154	122	59	30	23
Interest on corporate long term debt	298	288	279	246	280	273	296	300	315	426	433	435	451	375	252	228
Interest on individuals' mortgages	423	481	513	601	738	900	1,072	1,216	1,447	1,571	1,711	1,727	1,683	1,573	1,206	1,001
Property income	774	871	880	972	1,221	1,355	1,587	1,728	1,964	2,204	2,382	2,315	2,256	2,007	1,488	1,252
Net rentals received by individuals	1,804	1,912	1,978	2,271	2,360	2,469	2,471	2,326	2,176	2,241	2,216	1,733	1,136	705	754	706
Net imputed rent received by individuals	866	1,087	1,318	1,483	1,555	1,700	1,676	1,576	1,499	1,547	1,547	1,378	953	614	557	459
Entrepreneurial income	2,670	2,999	3,296	3,754	3,915	4,169	4,146	3,902	3,675	3,788	3,763	3,111	2,088	1,319	1,311	1,165
All income payments to individuals	4,055	4,522	4,794	5,324	5,786	6,223	6,374	6,382	6,500	6,973	7,260	6,323	5,097	3,894	3,301	2,985
Net business savings[1]	14	-41	-35	15	-45	17	-98	-60	-57	0.6	-329	-286	-352	-410	-353	-140
Income originating[1]	4,069	4,480	4,759	5,339	5,742	6,240	6,276	6,322	6,443	6,974	6,932	6,037	4,746	3,484	2,947	2,845

d. Total

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
All income payments to individuals	5,193	5,874	6,223	6,806	7,390	7,939	8,232	8,375	8,626	9,208	9,698	8,714	7,280	5,653	4,771	4,528
Net business savings	205	44	75	4.0	-26	58	72	114	160	343	-157	-371	-636	-747	-600	-335
Income originating	5,397	5,918	6,299	6,810	7,363	7,997	8,304	8,489	8,786	9,551	9,541	8,344	6,644	4,906	4,171	4,193

[1]Not adjusted for gains and losses on inventory holdings.

[2]Excluding payments to policy holders.

8. Government

Wages and salaries, Federal	2,071	1,534	1,323	1,142	1,149	1,179	1,241	1,289	1,308	1,348	1,402	1,430	1,448	1,364	1,220	1,408
Wages and salaries, state	155	180	193	195	206	223	247	238	267	289	308	320	326	326	317	311
Wages and salaries, county	149	177	209	223	232	247	248	259	281	304	326	341	358	351	319	328
Wages and salaries, city, township and minor civil divisions	583	684	727	740	792	846	887	952	1,028	1,073	1,128	1,148	1,151	1,121	995	1,040
Wages and salaries, public education	695	825	998	1,134	1,196	1,264	1,350	1,444	1,530	1,605	1,666	1,713	1,725	1,665	1,512	1,464
Pensions and relief[1]	422	558	668	675	690	713	644	633	663	687	726	769	875	907	1,852	2,691
Employees' compensation[1]	4,076	3,958	4,119	4,109	4,265	4,473	4,617	4,815	5,077	5,306	5,555	5,721	5,883	5,734	6,215	7,242
Interest	1,126	1,340	1,373	1,444	1,463	1,423	1,441	1,452	1,437	1,435	1,472	1,488	1,458	1,531	1,623	1,732
All income payments to individuals	5,202	5,299	5,492	5,553	5,728	5,896	6,058	6,267	6,514	6,741	7,028	7,209	7,341	7,265	7,838	8,974
Net savings	-4,279	1,607	660	1,002	1,425	1,465	1,571	1,877	2,017	1,764	1,507	975	-700	-1,406	-818	-1,181
Income originating	923	6,906	6,151	6,555	7,153	7,361	7,628	8,144	8,531	8,505	8,535	8,184	6,641	5,859	7,020	7,793

[1]Relief payments included are as follows, in millions of dollars:

	1933	1934
Work relief	619	1,389
Direct relief	482	657

9. Service

Wages, salaries and withdrawals by entrepreneurs	5,157	6,207	5,966	7,178	7,406	8,086	8,820	9,088	9,325	9,925	10,547	9,763	8,924	7,641	7,986	7,996
Dividends	29	80	66	49	68	71	92	105	107	99	117	113	74	54	34	49
Interest	16	15	18	23	28	33	41	48	63	73	87	99	94	110	95	85
Property income	45	95	84	72	96	104	133	153	169	172	204	212	167	165	129	134

9. Service (Continued)

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
All income payments to individuals	5,202	6,302	6,050	7,250	7,502	8,191	8,953	9,241	9,495	10,097	10,751	9,975	9,092	7,806	8,115	8,130
Net business savings	1,211	720	358	442	788	607	658	954	520	597	473	162	-490	-1,430	-2,005	-895
Income originating	6,413	7,022	6,408	7,691	8,290	8,798	9,611	10,195	10,015	10,693	11,224	10,136	8,602	6,375	6,111	7,236

10. Miscellaneous

Wages, salaries and withdrawals by entrepreneurs	1,753	1,968	1,681	1,900	2,145	2,238	2,451	2,603	2,646	2,838	3,074	2,919	2,646	2,245	2,067	2,302
Dividends	50	56	51	52	66	65	76	82	87	93	103	112	-37	-98	-125	-146
Interest	61	63	67	65	70	75	79	80	83	93	97	101	104	101	89	82
Dividends and interest, international	29	43	69	86	94	129	154	110	132	149	151	202	284	252	169	93
Property income	140	162	187	203	230	270	309	272	302	335	351	415	350	254	133	29
All income payments to individuals	1,893	2,130	1,868	2,103	2,375	2,508	2,759	2,874	2,948	3,173	3,425	3,334	2,996	2,499	2,200	2,330
Net business savings	371	285	147	56	164	99	102	208	86	84	-347	-1,123	-1,113	-962	-839	-82
Income originating	2,264	2,416	2,014	2,159	2,538	2,607	2,861	3,083	3,034	3,257	3,077	2,211	1,883	1,537	1,361	2,248

11. Total National Income

Aggregate income payments to individuals	57,499	67,056	55,177	58,041	65,854	66,763	69,921	72,823	73,381	75,823	79,808	73,620	62,565	49,785	47,880	52,385
Net savings of enterprises (aggregate of estimates by industrial branches)	4,343	7,913	4,216	2,213	4,946	4,494	5,701	7,369	4,747	5,147	4,303	-323	-6,566	-10,601	-9,055	-4,551
Net savings of enterprises, adjusted for disparity between depreciation and depletion at book values and at reproduction prices	2,427	5,330	3,166	1,665	3,853	3,606	4,926	6,654	4,048	4,574	3,616	-680	-6,556	-10,157	-8,596	-4,536
National income	59,926	72,386	58,343	59,706	69,706	70,369	74,846	79,477	77,429	80,397	83,424	72,940	56,010	39,628	39,283	47,849

Appendix Table II

NATIONAL INCOME AND AGGREGATE INCOME PAYMENTS TO INDIVIDUALS, OTHER VARIANTS, 1919-1934

(millions of dollars)

1. Agriculture

Adjusted

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Entrepreneurial income[1]	9,404	6,888	4,738	4,360	5,083	5,737	6,131	5,611	5,492	5,568	5,526	4,025	2,314	1,313	2,272	3,480
All income payments to individuals, second variant[1]	11,236	8,986	6,226	5,828	6,690	7,325	7,769	7,294	7,199	7,282	7,231	5,510	3,488	2,182	3,080	4,276

[1]Including a small amount of corporate savings which cannot be segregated.

2. Mining

Adjusted

Entrepreneurial income	50	61	37	27	33	27	40	43	34	31	35	24	15	9.0	12	13
All income payments to individuals, second variant	1,815	2,516	1,866	1,700	2,426	2,097	2,067	2,400	2,120	1,894	2,073	1,716	1,183	794	788	1,109
Net savings of corporations	17	-7.5	-157	-269	-243	-287	-113	-112	-175	-175	-180	-245	-312	-290	-284	-103

Unadjusted

Net business savings, second variant	4.3	179	-462	-150	-296	-298	-54	-80	-269	-145	-152	-303	-399	-312	-255	-55
Income originating, second variant	1,800	2,673	1,399	1,553	2,132	1,801	2,000	2,303	1,842	1,741	1,907	1,409	787	487	535	1,056
Entrepreneurial income, second variant	48	71	19	34	30	26	42	44	29	32	35	22	11	7.7	13	15
All income payments to individuals, third variant	1,813	2,526	1,848	1,707	2,423	2,097	2,069	2,401	2,115	1,895	2,073	1,714	1,180	793	789	1,111
Net savings of corporations, second variant	-13	148	-449	-153	-291	-296	-69	-98	-273	-154	-166	-305	-393	-306	-254	-55

3. Manufacturing

Adjusted

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Entrepreneurial income	833	845	562	513	585	482	521	534	475	439	491	366	163	4.8	17	83
All income payments to individuals, second variant	14,650	17,142	11,917	12,394	15,489	14,678	15,546	16,352	16,398	17,000	18,192	15,930	12,205	8,391	8,366	10,394
Net savings of corporations	1,521	2,765	710	685	1,295	920	1,286	1,799	788	927	1,635	249	-1,208	-2,144	-1,722	-580

Unadjusted

Net business savings, second variant	2,781	1,026	-1,918	1,196	1,652	869	1,501	1,201	542	1,058	1,473	-1,859	-3,029	-3,102	-1,021	393
Income originating, second variant	17,073	17,807	9,814	13,451	16,913	15,422	16,884	17,369	16,803	17,952	19,507	14,006	9,258	5,385	7,495	10,901
Entrepreneurial income, second variant	951	596	220	557	599	464	526	461	439	441	431	183	30	-55	82	127
All income payments to individuals, third variant	14,768	16,893	11,575	12,438	15,503	14,660	15,551	16,279	16,362	17,002	18,133	15,747	12,072	8,331	8,430	10,437
Net savings of corporations, second variant	2,305	914	-1,761	1,013	1,410	762	1,332	1,090	441	950	1,374	-1,741	-2,813	-2,946	-936	464

4. Construction

Adjusted

Entrepreneurial income	253	439	539	348	337	551	616	470	538	444	468	370	244	141	27	164
All income payments to individuals, second variant	1,507	2,224	1,868	1,917	2,610	2,834	2,916	3,062	3,052	3,072	3,063	2,627	1,712	815	597	826
Net savings of corporations	-6.0	34	27	-6.2	6.4	58	39	66	77	28	29	18	-24	-108	-91	-32

Unadjusted

Net business savings, second variant	116	56	-42	36	67	140	130	115	97	84	77	-37	-99	-204	-172	-44
Income originating, second variant	1,637	2,149	1,581	2,010	2,724	2,843	2,982	3,065	3,006	3,147	3,108	2,481	1,545	629	623	893
Entrepreneurial income, second variant	381	352	280	433	427	510	639	418	440	482	478	251	147	84	138	253
All income payments to individuals, third variant	1,635	2,137	1,609	2,002	2,700	2,793	2,939	3,010	2,954	3,110	3,072	2,508	1,615	757	707	915
Net savings of corporations, second variant	22	12	-28	8.8	23	50	43	55	52	37	35	-27	-70	-129	-84	-22

5. Transportation and Other Public Utilities

a. Other Transportation (Pipe Lines, Street Railways and Water Transportation)

Adjusted[1]

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Entrepreneurial income	14	10	2.5	3.8	4.2	3.7	4.8	5.1	3.3	4.9	5.9	2.6	1.3	0.03	2.0	1.6
All income payments to individuals, second variant	1,175	1,471	1,245	1,209	1,238	1,258	1,253	1,256	1,231	1,235	1,259	1,207	1,034	870	739	777
Net savings of corporations	40	67	5.2	4.3	36	33	33	37	15	31	40	-64	-73	-125	-31	-37

Unadjusted

Net business savings, second variant	44	70	3.0	3.3	35	33	33	38	14	31	43	-68	-84	-130	-40	-50
Income originating, second variant	1,215	1,538	1,250	1,213	1,274	1,291	1,285	1,293	1,245	1,266	1,301	1,141	952	742	699	728
Entrepreneurial income, second variant	14	10	2.5	3.8	4.2	3.7	4.8	5.1	3.3	4.9	6.0	2.5	0.5	-0.2	1.2	0.9
All income payments to individuals, third variant	1,175	1,471	1,245	1,209	1,238	1,258	1,253	1,256	1,231	1,235	1,259	1,207	1,033	869	738	777
Net savings of corporations, second variant	40	67	5.2	4.3	36	33	33	37	15	31	41	-66	-81	-127	-39	-49

b. Total

Adjusted

Entrepreneurial income[1]	18	14	6.2	7.0	7.0	6.3	7.1	7.0	4.8	6.2	7.1	3.7	2.1	0.7	2.5	2.1
All income payments to individuals, second variant	5,871	7,291	6,057	6,013	6,690	6,752	6,956	7,244	7,377	7,405	7,778	7,496	6,552	5,304	4,804	4,963
Net savings of corporations	118	171	314	215	400	375	668	690	461	637	735	219	-156	-443	-220	-309

Unadjusted

Net business savings, second variant	127	104	61	220	436	362	632	674	421	653	741	97	-244	-490	-209	-261
Income originating, second variant	5,994	7,391	6,121	6,234	7,126	7,113	7,588	7,917	7,799	8,058	8,518	7,596	6,309	4,816	4,595	4,703
Entrepreneurial income, second variant	18	14	6.2	7.0	7.0	6.3	7.1	7.0	4.8	6.2	7.2	3.5	1.3	0.4	1.8	1.5
All income payments to individuals, third variant	5,871	7,291	6,057	6,013	6,690	6,752	6,956	7,244	7,377	7,405	7,778	7,496	6,551	5,303	4,803	4,963
Net savings of corporations, second variant	123	101	64	221	437	361	632	673	422	652	740	99	-241	-487	-208	-260

[1]Not adjusted for gains and losses on inventory holdings.

6. Trade

Adjusted

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Entrepreneurial income	3,963	4,231	3,577	2,405	2,907	2,578	2,439	3,006	2,504	2,575	2,560	2,637	2,110	1,381	1,020	1,223
All income payments to individuals, second variant	9,800	10,675	9,076	8,387	9,635	9,469	9,826	10,843	10,201	10,477	10,979	10,624	9,011	6,623	5,611	6,305
Net savings of corporations	315	912	616	175	456	273	257	643	264	418	198	277	-221	-617	-765	-486

Unadjusted

Net business savings, second variant	3,050	428	-920	890	1,301	798	934	605	464	719	241	-1,182	-1,775	-1,870	-414	-66
Income originating, second variant	11,084	9,467	6,755	8,922	10,102	9,827	10,411	10,575	10,271	10,748	10,891	8,996	7,152	5,147	5,825	6,682
Entrepreneurial income, second variant	4,623	3,014	1,718	2,633	2,914	2,630	2,631	2,502	2,400	2,498	2,404	1,639	1,236	942	1,501	1,643
All income payments to individuals, third variant	10,460	9,458	7,217	8,615	9,642	9,521	10,018	10,339	10,097	10,400	10,822	9,626	8,137	6,184	6,091	6,725
Net savings of corporations, second variant	624	8.5	-462	307	460	306	394	236	174	348	69	-630	-985	-1,037	-267	-43

7. Finance

Unadjusted

Net business savings, second variant	285	97	-13	7.0	-42	50	50	92	159	339	67	-350	-940	-1,159	-958	-604
Income originating, second variant	5,477	5,971	6,211	6,813	7,347	7,989	8,282	8,467	8,785	9,547	9,765	8,365	6,340	4,495	3,813	3,924

8. Service

Adjusted

Wages, salaries and entrepreneurial income	6,333	6,926	6,328	7,595	8,153	8,646	9,418	10,013	9,850	10,508	11,028	9,992	8,570	6,583	6,299	7,130
All income payments to individuals, second variant	6,377	7,021	6,412	7,666	8,249	8,751	9,551	10,166	10,020	10,680	11,232	10,203	8,737	6,747	6,428	7,264
Net savings of corporations	35	0.6	-4.0	25	41	47	60	29	-4.4	13	-7.9	-67	-136	-372	-317	-28

Unadjusted

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Net business savings, second variant	1,225	725	337	443	790	604	653	948	518	591	496	149	-561	-1,535	-2,045	-884
Income originating, second variant	6,427	7,027	6,387	7,692	8,292	8,795	9,606	10,189	10,013	10,687	11,247	10,124	8,531	6,271	6,071	7,246
Net savings of corporations, second variant	49	5.6	-25	26	43	44	55	23	-6.4	7.0	15	-80	-207	-477	-357	-18

9. Miscellaneous

Adjusted

Wages, salaries and entrepreneurial income	2,060	2,204	1,862	1,933	2,266	2,312	2,507	2,768	2,713	2,896	3,112	2,858	2,495	2,025	2,003	2,335
All income payments to individuals, second variant	2,200	2,366	2,048	2,136	2,496	2,582	2,816	3,040	3,015	3,231	3,463	3,273	2,845	2,279	2,136	2,364
Net savings of corporations	65	50	-34	23	42	26	45	43	20	26	-385	-1,062	-962	-742	-775	-116

Unadjusted

Net business savings, second variant	375	261	127	62	163	99	106	207	86	84	81	-1,376	-1,866	-1,725	-1,491	-216
Income originating, second variant	2,268	2,392	1,994	2,165	2,537	2,607	2,865	3,082	3,034	3,257	3,506	1,958	1,130	774	708	2,114
Net savings of corporations, second variant	69	26	-54	29	41	26	49	42	20	26	43	-1,315	-1,715	-1,505	-1,427	-250

10. Total National Income

Adjusted

Entrepreneurial income[1] (aggregate of estimates by industrial branches)	17,191	15,476	12,756	11,414	12,867	13,550	13,900	13,574	12,723	12,852	12,850	10,537	6,936	4,169	4,662	6,131
Entrepreneurial income[1], adjusted for disparity between depreciation and depletion at book value and at reproduction prices	16,275	14,283	12,276	11,156	12,414	13,152	13,515	13,259	12,414	12,569	12,543	10,370	6,866	4,163	4,731	6,044

[1]Excluding entrepreneurial income in service and miscellaneous where the item of withdrawals cannot be segregated from wages and salaries.

10. Total National Income

Adjusted (Continued)

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Aggregate income payments to individuals[2], second variant (aggregate of estimates by industrial branches)	63,852	69,393	57,186	58,400	67,403	68,322	71,736	75,042	74,522	76,990	80,737	73,304	60,354	46,054	44,417	51,003
Aggregate income payments to individuals[2], second variant, adjusted for disparity between depreciation and depletion at book value and at reproduction prices	62,936	68,200	56,706	58,142	66,950	67,924	71,351	74,727	74,213	76,707	80,430	73,137	60,284	46,048	44,486	50,916
Net savings of corporations and government (aggregate of estimates by industrial branches)	-2,010	5,576	2,207	1,854	3,396	2,935	3,885	5,150	3,607	3,980	3,374	-6.6	-4,355	-6,870	-5,593	-3,169
Net savings of corporations and government, adjusted for disparity between depreciation and depletion at book value and at reproduction prices	-3,010	4,186	1,637	1,564	2,756	2,445	3,495	4,750	3,217	3,690	2,994	-197	-4,275	-6,420	-5,203	-3,067

Unadjusted

Net savings of enterprises, second variant	6,441	3,713	-2,537	3,184	5,164	4,320	6,095	5,582	3,902	5,099	4,407	-4,991	-11,383	-13,742	-8,115	-2,796
Income originating, second variant	63,940	70,769	52,640	61,225	71,017	71,083	76,015	78,405	77,283	80,922	84,215	68,629	51,182	36,044	39,764	49,588
Entrepreneurial income[1], second variant	18,095	13,933	10,278	11,778	12,975	13,542	14,122	12,946	12,480	12,816	12,644	9,235	5,827	3,610	5,318	6,684
Aggregate income payments to individuals[2], third variant	64,756	67,850	54,708	58,764	67,511	68,315	71,958	74,414	74,279	76,954	80,531	72,001	59,246	45,496	45,073	51,557
Net savings of corporations and government, second variant	-816	2,919	-2,068	2,461	3,506	2,769	4,057	3,991	3,005	3,968	3,684	-3,372	-8,063	-9,452	-5,308	-1,968

[1]Excluding entrepreneurial income in service and miscellaneous where the item of withdrawals cannot be segregated from wages and salaries.
[2]Including entrepreneurial income in service and miscellaneous.

and the number of entries in Appendix Table III differ. A few brief explanatory comments will perhaps be of assistance in consulting the tables.

For *agriculture* Appendix Table II provides only one variant, showing entrepreneurial income and aggregate income payments, both of which include entrepreneurial business savings. No segregation of the small amount of corporate savings is possible for agriculture; and since the estimates of agricultural income are based upon a direct comparison of gross income with expenses, no adjustments for gains and losses on inventory holdings or on the sale of capital assets are necessary. Hence there is no entry for the latter item in Appendix Table III. The adjustment for the disparity between depreciation and depletion at book value and at reproduction prices cannot be made for the separate industrial divisions, a point to be remembered for all the specific industrial branches commented upon below.

For *mining, manufacturing* and *construction,* three industrial branches in which the activity of individual entrepreneurs can be measured, Appendix Table II provides the full list of variants: the new variants of aggregate income payments inclusive of business savings by individual entrepreneurs, adjusted for gains and losses on inventory holdings and on the sale of capital assets (the latter since 1929); the first variant of corporate savings, similarly adjusted; and the unadjusted measures of income originating, net business savings, net corporate savings, and aggregate income payments, including unadjusted business savings of individual entrepreneurs. For these three industrial branches full entries are made in Appendix Table III.

For the various divisions of the *transportation and other public utilities* group no adjustment of business savings for gains and losses on inventory holdings was possible; consequently the unadjusted variants in Appendix Table II are fewer. In the *electric light and power and manufactured gas* division, withdrawals and total income of the few individual entrepreneurs were treated as identical; hence no adjusted variants of entrepreneurial income and of aggregate income payments appear for this division in Appendix Table II. The only adjustment made in net business savings, as shown in Appendix Table I, was for profits and losses on the sale of capital assets in the manufactured gas industry (see the entry in Appendix Table III); and it therefore seemed unnecessary to show any unadjusted variants for this division in Appendix Table II. In *steam railroads* (including *Pullman and express)* and *communication,* there are no in dividual entrepreneurs; and the estimates of business savings, based on the data of the Interstat Commerce Commission and the Census of Electr cal Industries, already exclude profits and losse on the sale of capital assets throughout the perio Since in these divisions the specific adjustment o business savings for gains and losses on inventor holdings is impossible, no variants appear for thes divisions in Appendix Table II. In the *other tran portation* division alone, where in *water transpo tation* entrepreneurial income is considerable an profits and losses on the sale of capital assets ca be segregated since 1929, Appendix Table II doe provide a full list of variants. Complete data ar provided for the *total transportation and othe public utilities* group in Appendix Tables II an III.

For *trade* a full list of variants is shown in Ap pendix Table II and a full list of entries in Appen dix Table III (see comments above for mining manufacturing and construction).

For the separate divisions of *finance* no adjust ment of business savings for gains and losses o inventory holdings was possible. Also, the activit of individual entrepreneurs was not covered i *banking* and *insurance* (but insurance agents wer included); in *real estate* income payments to in dividual entrepreneurs alone (rather than total en trepreneurial income) were estimated. Hence, th only adjustment possible for the separate division of finance was that for profits and losses on the sal of capital assets since 1929. As the correspondin items are given in Appendix Table III, it wa deemed unnecessary to provide unadjusted var ants in Appendix Table II. The only variant i the latter table is for the whole finance group, a unadjusted variant of business savings and of in come originating. These variants differ from th corresponding items in Appendix Table I in tha they are not adjusted for gains and losses either o inventory holdings or on the sale of capital assets.

The measures of income originating in the fiel of *government* are not subject to the distortion affecting business savings; and no distinction be tween entrepreneurial withdrawals and savings i here involved. Hence, no variants appear for thi field in Appendix Table II and no entries in Ap pendix Table III.

For the *service* and *miscellaneous* groups roug measures of net business savings of individual en trepreneurs were obtained, although, like most o the estimates in these two fields, they rest upo very slender foundations. But since in these field

Appendix Table III

ESTIMATED LOSSES AND GAINS BY BUSINESS ENTERPRISES ON THE SALE OF CAPITAL ASSETS, 1929-1934

(millions of dollars)

	1929	1930	1931	1932	1933	1934
ining						
orporate	31	32	-12	-18	-14	-3.2
ndividual entrepreneurs	1.5	1.8	-0.6	-1.4	-0.9	-0.2
anufacturing						
orporate	71	-56	-204	-218	-236	117
ndividual entrepreneurs	-30	-19	-18	-12	-24	-38
onstruction						
orporate	4.6	-9.3	-19	-12	-8.1	-2.1
ndividual entrepreneurs	3.8	-4.1	-8.1	-6.8	-8.6	-2.2
ransportation and other public utilities						
Manufactured gas						
Corporate	-.008	0.3	-2.9	-1.8	-7.0	-5.2
Water transportation						
Corporate	1.2	-1.5	-8.0	-2.3	-7.7	-12
Individual entrepreneurs	0.1	-0.2	-0.8	-0.2	-0.8	-0.6
Total						
Corporate	1.2	-1.3	-11	-4.1	-15	-17
Individual entrepreneurs	0.1	-0.2	-0.8	-0.2	-0.8	-0.6
'rade						
:orporate	28	-29	-100	-55	-62	-9.9
:ndividual entrepreneurs	29	-28	-86	-47	-49	-7.8
'inance						
Banking						
Corporate	48	18	-83	-140	-142	-112
Insurance						
Corporate	35	-14	-70	-109	-114	-117
Real estate						
Corporate	141	19	-105	-144	-115	-46
Total						
Corporate	224	24	-257	-393	-371	-274
ervice						
:orporate	23	2.4	-42	-91	-56	-2.8
liscellaneous						
:orporate	428	-251	-751	-762	-654	-134
'otal						
:orporate	811	-287	-1,396	-1,553	-1,417	-327
ndividual entrepreneurs	5.0	-49	-114	-67	-83	-49

orporations account for only a minor share of ctivity, it was deemed inadvisable to use the cor- orate data for the purpose of adjusting business avings of individual entrepreneurs for the gains nd losses on inventory holdings and on the sale f capital assets. Instead, adjusted and unadjusted usiness savings of individual entrepreneurs were reated as identical and entered under the head- ng of *Adjusted* in Appendix Table II. This treat- nent explains why, for these two fields, Appendix Table II does not provide the full list of variants; t omits the third variant of aggregate income pay- nents (which in these fields is identical with the econd variant) and the second variant of net sav- ngs of corporations (which is identical with the irst). For the same reason the entries in Appendix Table III are confined to corporations in these wo fields.

For the national totals the adjusted variants for the separate industrial branches can be further corrected for the disparity between depreciation charges at book value and at reproduction cost. The unadjusted variants are, for the national totals, the same as those for the various industrial branches.

It is hoped that the brief comments above and the detailed presentation in Appendix Tables I, II and III will enable the student to distinguish clearly each adjustment and to recombine the sub-component elements so as to arrive at other variants of national income that would better satisfy his purpose.

The detailed and basic analysis was carried only through 1934. The measures for 1935, which appear in Tables 1, 3, 4 and 6, were obtained by carry-

ing forward our estimates for 1934 on the basis of the changes from 1934 to 1935 shown in the corresponding estimates of the Department of Commerce. This extrapolation was based on the Department's most recent estimates for 1934 and 1935.[1]

[1] See *National Income, 1929–1936*, U. S. Department of Commerce (Washington, 1937).

APPENDIX B
COMPARISON WITH DEPARTMENT OF COMMERCE ESTIMATES

COMPARISONS of some of our estimates with the measures of national income for 1929–35 published by the Department of Commerce,[1] when made not only for the over-all totals but also for the various industrial branches or types of income share, reveal discrepancies that stem from three essentially distinct sources: differences in (1) scope and concept; (2) the estimating procedures and the data used; (3) the industrial or type-of-payment classification, especially the former.

To enumerate the various sources of discrepancies between the two sets of estimates, and to demonstrate the quantitative effect of each source would be impossible here. Especially would analysis of differences in method, data and classification be a task much beyond the scope of this report, for it would require a careful and detailed description of sources and methods used in deriving both sets of estimates, and a minute comparison of the two. The only observation that can be made here is that our attempt to cover the entire period 1919–35 was rendered difficult by the lack of a number of sources for years before 1929 that are available for the period since 1929; and that in order to arrive at comparable and continuous series for the entire period the methods employed for years preceding and following 1929 had to be in close consonance. For this reason alone the data and methods used in our study naturally differ from those used in a study that confines itself to years since 1929. These differences in data and method entail also different classifications. But it is feasible here to indicate the basic differences in scope and concept between our estimates and those of the Department of Commerce, and to show how they are reflected in quantitative differences.

The basic differences in scope between the magnitude that is here designated as aggregate income payments to individuals and that designated by the Department of Commerce (and in our earlier writings) as income paid out are as follows: (1) aggregate income payments to individuals include imputed rental on houses inhabited by owners while income paid out omits it; (2) our aggregate includes all relief payments by governmental agencies, not merely work-relief, which is the only relief item included in the Department of Commerce estimates, the reason being that an item of net savings by governmental agencies is subsequently included in our estimate of national income, while this balancing item is absent from the Department of Commerce national income produced totals; (3) our aggregate covers industrial pensions and compensation for injury in but a few industries whereas the Department of Commerce income paid out covers them fully; (4) among the differences in assumptions underlying the estimates, one deserves singling out, viz., that involved in measuring the entrepreneurial part of income paid out in agriculture. This item in the Department of Commerce estimate is based on the allowance for labor of farm operators and of family members at rates paid to farm workers. In our estimate this amount is raised 25 per cent to allow for the difference in average expenditures on living between farmers and tenant families and farm workers, a ratio established on the basis of scattered sample studies of living expenses on farms.

The quantitative effect of these differences, as well as the other discrepancies between the two sets of estimates, are set forth in Appendix Table IV. Aggregate income payments to individuals exceed income paid out in all years by an amount ranging from 0.7 to 3.0 billion dollars, or from 1 to 7 per cent of the totals. But when the excesses and deficiencies due to the various sources mentioned

[1] See the latest revision in *National Income, 1929–1936*, U. S. Department of Commerce (Washington, 1937).

Appendix Table IV

COMPARISON OF AGGREGATE INCOME PAYMENTS (N.B.E.R.) WITH INCOME PAID OUT (D. OF C.), 1929-1935

(absolute figures in millions of dollars)

	1929	1930	1931	1932	1933	1934	1935
Aggregate income payments	79,808	73,620	62,565	49,785	47,880	52,385	56,287
Income paid out	78,174	72,872	61,551	48,487	44,907	51,004	54,645
Gross difference	+1,634	+748	+1,014	+1,298	+2,973	+1,381	+1,642
Accountable excess (+) or deficiency (-) of N.B.E.R. estimate							
Imputed rents	+1,547	+1,378	+953	+614	+557	+459	+521
Relief payments of government (excl. work-relief)					+482	+657	+834
Difference in pensions, compensation for injury, etc.	-127	-134	-123	-122	-144	-179	-240
Difference in entrepreneurial withdrawals in agriculture	+1,130	+1,026	+817	+634	+601	+671	+735
Total of four preceding items	+2,550	+2,270	+1,647	+1,126	+1,496	+1,608	+1,850
Aggregate income payments, adjusted for items above	77,258	71,350	60,918	48,659	46,384	50,777	54,437
Net difference (compared with income paid out)	-916	-1,522	-633	+172	+1,477	-227	-208
Net difference, percentage of income paid out	-1.2	-2.1	-1.0	+0.4	+3.3	-0.4	-0.4

bove are taken into account, the residual differnce between the two estimates becomes much maller, ranging from 0.2 to 1.5 billion, and thus t the maximum not exceeding 3.3 per cent of ither total. This residual difference appears to be lue exclusively to differences in data and procelure; and so far as comparison of the industrial ranches is possible, its main locus is in the fields f service, finance and miscellaneous—all fields haracterized by paucity of data and hence by the entative character of the resulting estimates.

Our net savings item is designated as net savings f enterprises; that in the Department of Comnerce report is defined as business savings. This difference in designation indicates the difference in scope: our total includes net savings of governmental agencies and the Department of Commerce estimate does not. The other sources of difference lie in the extent to which the adjustment of the accounting measure of net business savings has been carried. In the Department of Commerce report it is confined to the exclusion of business gains and losses on the sale of capital assets. Our adjustment, as mentioned several times, excludes also some of the gains and losses arising from inventory holdings and from the practice of charging capital consumption at original cost rather than at current market prices.

Appendix Table V

COMPARISON OF NET SAVINGS OF ENTERPRISES (N.B.E.R.) WITH BUSINESS SAVINGS (D. OF C.), 1929-1935

(absolute figures in millions of dollars)

	1929	1930	1931	1932	1933	1934	1935
Net savings of enterprises	3,616	-680	-6,556	-10,157	-8,596	-4,536	-3,252
Business savings	2,583	-4,903	-8,052	-8,942	-3,094	-1,429	310
Gross difference	+1,033	+4,223	+1,496	-1,215	-5,502	-3,107	-3,562
Accountable excess (+) or deficiency (-) of N.B.E.R. estimate							
Savings of government	+1,507	+975	-700	-1,406	-818	-1,181	-1,645
Adjustment for changes in inventory valuation	+712	+4,331	+3,308	+1,520	-2,440	-2,130	-785
Adjustment of depreciation and depletion deductions	-687	-357	+10	+444	+459	+15	-75
Difference in net savings in agriculture	-1,301	-1,325	-1,193	-1,048	-1,053	-1,010	-1,230
Total of four preceding items	+231	+3,624	+1,425	-490	-3,852	-4,306	-3,735
Net savings of enterprises adjusted for items above	3,385	-4,304	-7,981	-9,667	-4,744	-230	483
Net difference (compared with business savings)	+802	+599	+71	-725	-1,650	+1,199	+173

Net savings of enterprises as presented here are compared in Appendix Table V with business savings as estimated in the Department of Commerce report. The gross difference between the two estimates is quite substantial, and varies materially from year to year. But when the effect of the easily ascertainable differences in scope and method is removed, the residual difference is appreciably reduced, becoming negligible in 1931 and rising to a significant figure only in 1933 and 1934.

Appendix Table VI provides a comparison of the most inclusive totals in the two estimates, viz., our national income total and the Department o Commerce national income produced. The gros difference between the two totals ranges from 5.(billion dollars in 1930, when it is greatest, to a fraction of a billion in 1932, when it is smallest But the impression that this gross difference create is misleading. If differences in scope, concept an some of the methods are taken into account, th residual difference becomes appreciably smaller ranging from 0.04 to 1.0 billion dollars, or from 0. to 2.0 per cent of income produced.

Appendix Table VI

COMPARISON OF TOTAL NATIONAL INCOME (N.B.E.R.) WITH NATIONAL INCOME PRODUCED (D. OF C.), 1929-1935

(absolute figures in millions of dollars)

	1929	1930	1931	1932	1933	1934	1935
Total national income	83,424	72,940	56,010	39,628	39,283	47,849	53,035
National income produced	80,757	67,969	53,499	39,545	41,813	49,575	54,955
Gross difference	+2,667	+4,971	+2,511	+83	-2,530	-1,726	-1,920
Difference accounted for in Table IV	+2,550	+2,270	+1,647	+1,126	+1,496	+1,608	+1,850
Difference accounted for in Table V	+231	+3,624	+1,425	-490	-3,852	-4,306	-3,735
Total of two preceding items	+2,781	+5,894	+3,072	+636	-2,356	-2,698	-1,885
Total national income adjusted for items listed in Tables IV and V	80,643	67,046	52,938	38,992	41,639	50,547	54,920
Net difference (compared with income produced)	-114	-923	-561	-553	-174	+972	-35
Net difference, percentage of income produced	-0.1	-1.4	-1.0	-1.4	-0.4	+2.0	-0.1

APPENDIX C

CHANGES IN PROCEDURE AND SCOPE SINCE THE PUBLICATION OF PRELIMINARY ESTIMATES OF CAPITAL FORMATION IN BULLETIN 52

Preliminary estimates of commodity flow and capital formation were published in Gross Capital Formation, 1919–1933 (*Bulletin 52*, National Bureau of Economic Research, November 15, 1934). The main changes in procedure and scope that have resulted from the succeeding two and a half years of study may be summarized with reference to the measurement of: (1) the flow of finished commodities; (2) the volume of construction; (3) repairs, maintenance and servicing; (4) net changes in commodity inventories.

1 FLOW OF FINISHED COMMODITIES

Three important stages of the statistical proce dure by which we measure the flow of finishe commodities to their ultimate domestic recipient are: (a) the ascertainment of the value, at produ ers' prices, of finished commodities destined fo use by domestic ultimate recipients; (b) the est mate of transportation and distributive charge that are to be added to producers' prices in orde to measure the flow of commodities at cost to thei

ultimate users; (c) the measurement of changes in inventories of finished commodities, which allows us to pass from production, adjusted for imports and exports, to sales to ultimate purchasers.

In revising the preliminary estimates, the statistical procedures involved in these three major stages were basically overhauled. In going over the estimates of producers' value of finished commodities, the main distinction between finished and unfinished commodities was checked in the light of published materials and by correspondence with trade associations and commodity experts. The classification of finished commodities by durability was standardized; the interpolation for intercensal years and the adjustment for price changes checked; and the adjustment for imports and exports made more variable over time, in cases of commodities for which other information indicated a marked change in the share of foreign trade.

In the measurement of transportation and distributive charges the changes in procedure were more significant. Transportation costs were, in general, somewhat neglected in preparing the preliminary estimates. More careful consideration led to a marked increase in this item and to a corresponding rise in the final cost to ultimate purchasers. For distributive costs, the former assumption of constancy over time of relative distributive charges (i.e., of gross margins in percentages of the value of sales) was abandoned. On the basis of scattered sample data, an approximate estimate of temporal changes in distributive margins was prepared. And in applying this index of changing distributive margins in each year of the period due attention was paid to the shifting importance of various minor commodity groups within the four major divisions of finished commodities.

The estimate of changes in inventories of finished commodities is part of the general procedure of measuring changes in all commodity inventories. As will be indicated below, the methods of estimating inventory changes were materially revised; in consequence, similar modifications were made in estimating net changes in inventories of finished commodities.

The combined result of all these revisions in the measurement of the flow of finished commodities to ultimate recipients, at cost to them, has been to raise the estimates somewhat, owing primarily to the more inclusive consideration of transportation charges. That this increase does not appear in a direct comparison of the flow of consumers' and producers' durable commodities (Table 10 of this report and Table 5 of *Bulletin 52*) is due to a difference in the scope of the two sets of estimates. The measures in *Bulletin 52* include such repairs and servicing of durable commodities as could be measured with the available data. The estimates in Table 10 of this report exclude them. If this item (Appendix Table VII) is added to the estimates in Table 10, the flow of finished commodities as measured in this report is larger, except in one or two years (exceptions due to differences in estimates of inventory changes and perhaps in classification), than that in *Bulletin 52*.

2 VOLUME OF CONSTRUCTION

In the preliminary estimates the measure of the total volume of construction was based largely upon the estimated consumption of construction materials, raised by a constant ratio of value of construction materials consumed to total value of construction (both expressed in 1929 prices). This particular estimate also has been revised through a more careful and inclusive consideration of the output of construction materials, transportation costs, changes in construction materials inventories, in the cost of distribution of construction materials to their consumers, and in the magnitude of the ratio of construction materials consumed to the total volume of construction. These revisions resulted in a significant increase in the estimated volume of total construction, as may be seen from comparing Appendix Table VII below with Table 5 of *Bulletin 52*.

But in accordance with the interpretation of repair and maintenance construction as an activity whose results are largely non-durable, the volume of construction estimated on the basis of consumption of all construction materials is obviously too inclusive for our purposes. For this reason, another estimate of the volume of new construction, which includes only such substantial repairs and alterations as call for building permits, has been prepared. This estimate was arrived at largely by utilizing the results of other investigators in the field. And it is this estimate of new construction, substantially lower than that of all construction as measured either in *Bulletin 52* or as revised subsequently, that enters the capital formation totals, Variant I or II, in this report.

This change in the area covered by the estimate of construction resulted in an appreciable lowering of the volume of commodity flow and of capital formation. It made possible a more complete classification of gross capital formation by type of user,

Appendix Table VII

VALUE OF REPAIRS, SERVICING AND MAINTENANCE OF DURABLE COMMODITIES, 1919-1933

(millions of dollars)

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
	Current Prices														
1 Servicing and repairs of movable durable commodities	2,218	2,641	2,051	2,010	2,456	2,257	2,306	2,423	2,392	2,417	2,576	2,191	1,731	1,367	1,346
a Consumers' durable	361	486	470	455	528	595	660	704	759	832	922	859	788	719	702
b Producers' durable	1,857	2,155	1,581	1,555	1,928	1,662	1,646	1,719	1,633	1,585	1,654	1,332	943	648	644
2 Volume of all construction based on consumption of construction materials	12,158	13,341	11,259	12,626	13,806	14,472	15,664	16,434	16,862	17,385	16,207	14,601	10,200	5,854	5,510
3 Volume of new construction	5,915	6,336	6,105	8,383	9,643	10,491	11,811	11,593	11,787	11,572	10,518	8,629	6,109	3,496	3,230
4 Estimated maintenance and repairs, line 2 - line 3	6,243	7,005	5,154	4,243	4,163	3,981	3,853	4,841	5,075	5,813	5,689	5,972	4,091	2,358	2,280
5 Total repairs, servicing and maintenance, line 1 + line 4	8,461	9,646	7,205	6,253	6,619	6,238	6,159	7,264	7,467	8,230	8,265	8,163	5,822	3,725	3,626
	1929 Prices														
1 Servicing and repairs of movable durable commodities	1,777	1,913	1,923	2,185	2,367	2,303	2,443	2,596	2,478	2,536	2,576	2,268	1,925	1,596	1,584
a Consumers' durable	281	335	364	433	539	614	695	781	822	863	922	912	884	809	799
b Producers' durable	1,496	1,578	1,559	1,752	1,828	1,689	1,748	1,815	1,656	1,673	1,654	1,356	1,041	787	785
2 Volume of all construction based on consumption of construction materials	12,085	10,286	11,384	13,235	13,025	13,822	15,372	16,143	16,629	17,316	16,207	15,006	11,499	7,318	6,711
3 Volume of new construction	5,879	4,886	6,170	8,790	9,100	10,019	11,592	11,388	11,623	11,530	10,518	8,869	6,886	4,372	3,935
4 Estimated maintenance and repairs, line 2 - line 3	6,206	5,400	5,214	4,445	3,925	3,803	3,780	4,755	5,006	5,786	5,689	6,137	4,613	2,946	2,776
5 Total repairs, servicing and maintenance, line 1 + line 4	7,983	7,313	7,137	6,630	6,292	6,106	6,223	7,351	7,484	8,322	8,265	8,405	6,538	4,542	4,360

and hence a more complete measurement of net capital formation.

3 REPAIRS, MAINTENANCE AND SERVICING

As already indicated, the preliminary estimates include in commodity flow and in capital formation such repairs and servicing of existing durable commodities as can be measured with the data available in the Census of Manufactures and the Census of Retail Trade; and all repairs and maintenance construction covered by the global estimate of the volume of construction based upon the consumption of construction materials. These items are excluded from capital formation as measured in this report.[1] But for possible use by other students in the field, the available estimates of these items are assembled in Appendix Table VII for 1919 through 1933, no attempt having been made to prepare preliminary estimates for 1934 and 1935.

Servicing, repairs and maintenance of durable commodities, to the extent that they could be measured for the period, averaged, in current prices, some 6.9 billion dollars per year, and ranged from a 'low' of 3.6 billion in 1933 to a 'high' of 9.6 billion dollars in 1920. In 1929 prices, the average volume per year amounted to 6.9 billion dollars, ranging from 4.4 billion in 1933 to 8.4 in 1930. The inclusion of this volume would be a significant addition to gross commodity flow; and a very substantial relative addition to gross capital formation, whose average volume over the same period amounted, in current prices to 22.1 billion dollars, and in 1929 prices to 21.5 billion.

The measures in Appendix Table VII must be viewed as crude approximations. The estimates of repairs and servicing of durable commodities are admittedly incomplete since they are confined to services rendered by manufacturing and retail establishments. The year-to-year changes in all the estimates, but especially in the item representing repair and maintenance construction, should not be given much weight. This item is derived as the difference between the global estimate of construction based on the consumption of all construction materials and the estimate of new construction based on substantially different data. Hence it is affected by differences between the assumptions on which the two construction measures are based, and their effect upon the faithfulness with which the two measures reflect fluctuations in the volume of the activities they purport to describe. On the other hand, whatever scanty data are available on repairs and maintenance construction suggest that the average volume of this item in Appendix Table VII is tolerably reliable.

[1] See Section VI for a more detailed discussion.

4 NET CHANGES IN COMMODITY INVENTORIES

This element in commodity flow and capital formation is the one for which data are least adequate; and statistical ingenuity can at best produce results that, while plausible, may be vitiated by errors much larger relatively than those possibly present in the other estimates in this report.

The scope and method of measuring net changes in commodity inventories have been altered in several ways since 1934. First, the preliminary estimates evaluated net changes in inventories before 1926, and especially before 1924, on the basis of a regression line of inventory changes on the changes in cost of goods established for corporations since 1925. In the revision these were based on the movement of the inventory-sales ratio for a corporate sample compiled from reports in Moody's and other reference volumes of corporate income accounts and balance sheets. Second, since inventories are estimated on the basis of their relation to the volume of commodity flow, any changes in the estimate of commodity flow would also be reflected in the measure of inventory changes. Third, a more careful and inclusive consideration of the adjustment of current inventories for changes in their valuation affected somewhat the final estimates of net changes. Fourth, we included changes in stocks of monetary metals, an item omitted from the preliminary estimates.

As a result of these modifications, the net change in commodity inventories as estimated in this report differs substantially from that in *Bulletin 52* (compare Table 10 of this report with Table 5 of *Bulletin 52*). But the whole item is not large as compared with the total commodity flow or capital formation; and since with respect to the direction of change from year to year the present and the earlier estimates are similar, the effect of the revision on the important totals is relatively slight.

This brief account indicates only the major changes in scope and procedure since the publication of the preliminary estimates in 1934. Their combined effect on the total estimate of commodity flow and capital formation was to lower the volumes somewhat and to accentuate their fluctua-

tions, especially the decline that appeared after 1929. The procedures used and the supporting data will be described in detail in Volume I of *Commodity Flow and Capital Formation.*

APPENDIX D
COMPARABILITY OF ESTIMATES OF CAPITAL FORMATION WITH THOSE OF NATIONAL PRODUCT

NATIONAL income was defined as the net value of commodities and services produced during the year, 'net' in the sense that the total output of all goods is reduced by the value of commodities consumed in the process of production. In order to measure properly this net value, i.e., the net product that can be imputed to the services of individuals and of capital participating in the process of production, the total value produced must be adjusted for the *current* value of the commodities consumed in production. However, it is the practice of business firms, as revealed by standard accounting procedure, to measure costs of production, when they result from the consumption of commodities, not at the market value of the commodities when consumed, but on a different basis, usually at their original cost to the consuming business enterprise. Thus, depreciation and depletion of fixed capital goods are usually reckoned on the basis of original cost to the business enterprise, rather than on the basis of the current reproduction price. For inventories, the principle of cost or market, whichever lower, is followed. As a result, in periods of rising prices inventory consumed is evaluated at cost prices, which are lower than the market price prevailing at the time of consumption; and in periods of declining prices, even though current market prices are used, there is an offsetting loss on the inventory in the profit and loss account. For these reasons we introduced two adjustments to yield an approximation to the net value of commodities and services produced, on the assumption that the cost of currently consumed fixed assets and inventories is evaluated at the current market price, rather than at the cost of these commodities at the time of their purchase by the consuming business enterprise.

But these adjustments, justified as they are in an attempt to arrive at a measure of national product consonant with the theoretical concept, may disturb the comparisons of national income, and hence of gross national product, with our measures of commodity flow and of capital formation. It is therefore important to consider the comparability of the two sets of measures, with reference, first, to the implied evaluation of the current consumption of fixed capital assets; second, to the measurement of the cost of inventories consumed.

Gross capital formation is 'gross' in that the total has not been reduced by the value of fixed capital goods consumed in the process of producing all finished commodities (including unfinished that went into inventories or abroad) or of the goods that enter gross capital formation. But how should this value be calculated, on a book or reproduction price basis? The method does not affect the result of comparisons we wish to make, provided it is consistently applied in deriving the gross national product. If it is assumed that the cost of fixed capital assets consumed should be evaluated on a book value basis, gross national product should be computed by adding to national income, based on the acceptance of the book value basis of capital consumption charges, the total of the latter on a book value basis. If it is assumed that the consumption of fixed capital assets, unadjusted for in gross capital formation, should be calculated on the current reproduction price basis, then the comparable gross national product would be obtained by adding to national income, *adjusted* for the disparity between book and reproduction value bases of capital consumption charges, the capital consumption item estimated on the basis of current reproduction prices. The latter procedure was followed in Table 12 but either treatment would yield the same absolute value of gross national product.

In comparing net capital formation with national income capital consumption charges should likewise be treated consistently. If we obtain net capital formation by subtracting from gross capital formation the volume of capital consumption that is based on the book value of the assets consumed, the comparison should obviously be made

with national income measured on the same basis (i.e., unadjusted). If total net capital formation is obtained by subtracting from gross capital formation the value of capital consumed at its current market price, the comparison should be made with national income estimated on the same basis, i.e., adjusted for the disparity between the book and reproduction price bases of depreciation and depletion deductions. The second seems to us a more logical approach to the measurement of net capital formation and national income, and has accordingly been adopted in Table 15.

The questions arising in the treatment of the cost of inventories consumed are somewhat more complex. They can best be answered in the form of three brief statements, illustrated by examples.

(1) If it were possible to eliminate completely all gains and losses on holding of inventories, by evaluating inventories consumed at their price current at the time of eventual sale in the form of finished product, then the total national product obtained by adding income payments and savings of enterprises would not be identical with the total obtained by adding consumers' outlay and capital formation. This can be demonstrated by the following oversimplified example. Let us assume two enterprises comprising the whole national economy: A, producing semifinished products and selling the 60 units produced to B, at $1.00 per unit. Enterprise B processes these semifinished products, the sum total of wages, salaries, dividends, etc., including the normal rate of profit, amounting to 42 cents per unit. But the price of the semifinished product rises from $1.00 to $1.25 by the time B is ready to sell the finished product; B then sells the finished product, the total output of the national economy, for $1.67 per unit, or a total of $100. Now if we know that the cost of inventories consumed at the time of eventual sale is $1.25 per unit, our calculation of national income by the method used in this report would be: for enterprise A, $60; for enterprise B, $25 = $100 − (60 × $1.25). The total would thus be $85. The current flow of finished products to ultimate consumers, i.e., consumers' outlay, would, however, be $100, and capital formation, 0, thus yielding by this method a total national product of $100.

(2) But because of limitations of data, the adjustment we made was confined to correcting for the disparity between the current value of the change in inventories and the change in the book value of inventories; no full adjustment was possible for the difference between the price at which inventory commodities were purchased and their price at the time of eventual sale in the form of finished product. Hence the totals of national product obtained by adding net income shares originating should be identical with the totals obtained by adding consumers' outlay and capital formation. Thus, in the example above, there being no inventories at the beginning or end of the time unit, the net saving of enterprise B would remain unadjusted. And the national income total, as obtained in our measurement, would be $60 produced by enterprise A, and $40 = $100 − (60 × $1.00), the total of $100 being the same as that obtained by adding consumers' outlay and capital formation.

This can be further illustrated by introducing inventories and complicating the example somewhat. Let us assume that enterprise B starts with a stock of 60 units of semifinished product bought from A at $1.00 per unit; that enterprise A raises the price to $1.25 on its new output and sells it to B for the purpose of replenishing B's inventories at the end of the year; and that as in the former example B charges $1.67 per unit of its finished product, producing altogether 60 units. On these assumptions, the national income total would be as follows: originating in enterprise A, $75; originating in enterprise B, unadjusted, $100 − ($60 + $75 − $75) = $40; unadjusted national income total, $115; adjustment for the disparity between change in commodity inventories and the difference between successive year-end inventories in current valuation, 0 − $15; adjusted national income total, $100. The same total is obtained by adding consumers' outlay, $100, and capital formation, 0.

It is clear that so long as the volume of inventories is constant there can be no difference in the results obtained by the two methods, even though the book value of inventories changes. For by the net-income-addition method, the net income product of enterprise B will be evaluated at the total sales value of the finished goods it produces minus the price *paid* by B to A for unfinished commodities. The final figure would include no allowance for inventory change, since with a constant volume of inventories, any change in book value will be eliminated by our adjustment. The net income product of enterprise A will be evaluated at the sum it received from enterprise B. The sum of these two must obviously equal the value of the finished goods, since the value of the semifinished goods cancels out. By the consumers' outlay-capital formation method the total is obviously also the value of the finished goods.

(3) This identity between national product,

obtained by summating income payments and savings of enterprises, and that obtained by adding consumers' outlay and capital formation, persists when the commodity volume of stocks changes. Thus, let us retain the conditions of the example just discussed, but assume that enterprise B produces and sells 80 units, reducing its inventory by 20 units. National income will equal: originating in A, $75; originating in B, unadjusted, (80 × $1.67) − ($60 + $75 − $50) = $133.60 − $85 = $48.60; total national income, unadjusted, $123.60 = $75 + $48.60; disparity between change in commodity inventories in current prices [price current during the year is $1.25 per unit, see example under (2)] and difference between successive year-end inventories in changing current valuation, (−20 × $1.25) − ($50 − $60) = −$25.00 + $10 = −$15.00; total national income, adjusted, $123.60 − $15.00 = $108.60. If we calculate by adding consumers' outlay and capital formation, the same result is obtained. Consumers' outlay is 80 × $1.67 = $133.60; capital formation is negative, representing a decline in stocks, and amounts to −20 × $1.25 = −$25.00. Total national product, $133.60 − $25.00 = $108.60.

The only difference between this and the situation under (2) is that in computing the net income product of enterprise B not only must the amount paid to A for unfinished goods be deducted but also the value of the change in inventory (with due regard to signs) must be added. This is what is done by our procedure, by which we first deduct the amount paid to A, add the change in the value of inventory, and then correct the result for the difference between the change in the value of inventory and the value of the change in inventory. It is evident that when the net income product of B, computed in this manner, is added to the net income product of A, the sum must equal consumers' outlay and capital formation, provided the change in inventories is evaluated at the same price in computing both B's net income product and the volume of capital formation.

This brief discussion shows that, theoretically, the measures of the national product, as adjusted by us, should yield results identical with the totals obtained by adding capital formation and consumers' outlay. But this identity can materialize only if statistical difficulties do not prevent the computation of precise measures of the national product totals by the two methods. In actual practice, in the studies that yielded the measures of national income, of gross capital formation, and of capital consumption, a number of assumptions and approximations were made in order to bridge over gaps in the available data. These assumptions and approximations were necessarily different in the different studies and affected the resulting magnitudes, with corresponding effects on the statistical comparability of the measures. How these differences in procedure affect the comparison of the annual estimates may be seen from Appendix Table VIII.

Erratic fluctuations are observable primarily in the *differences* between commodity flow and capital formation, on the one hand, and gross and net national product, on the other; especially when the absolute differences are relatively small, as they are when they represent services not embodied in new commodities. The general effect of these erratic fluctuations, especially in line 11, is to raise the differences in years of depression like 1921, 1924 and 1930. The steps in the statistical procedures used to arrive at the estimates compared in Appendix Table VIII, which explain these erratic fluctuations in the differences, will be stated below in terms of the comparison between commodity flow, including producers' durable commodities, and gross national product. But they are, of course, also applicable to the other comparisons, even though their relative effect on the differences revealed is naturally smaller.

First, the apportionment in Appendix Table VIII is between *cost of services entering* new commodities and those not embodied in new commodities; not between the *quantities* of services, even if weighted by their prices. Hence in a number of industries supplying jointly both producers of new commodities and ultimate consumers or producers of services not embodied in new commodities, the cost attributable to the production and distribution of new commodities is likely to rise and decline with business cycles, much more than would the volume of services at current prices. Thus, in the case of government, insurance and banking—all branches whose net product is quite unresponsive to business cycles—the share of their gross and net product attributed to and entering as cost to the producers, transporters and distributors of commodities fluctuates, of course, with business cycles. (This share would be represented by business taxes, short term interest payments, some dividend and long term interest payments made by the enterprises to banks and insurance companies.) Similarly, the contributions by producers, transporters and distributors of new commodities out of the cost of these commodities to the maintenance of semipublic enterprises (hos-

Appendix Table VIII

ANNUAL ESTIMATES OF NATIONAL PRODUCT, CAPITAL FORMATION AND CONSUMERS' OUTLAY, 1919-1935

(millions of dollars)

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
1 Gross national product	68,750	82,836	66,148	67,186	78,214	78,791	83,413	88,780	86,778	90,053	93,640	82,723	64,751	47,202	46,538	55,765	61,243
2 Gross capital formation, Variant I	19,341	22,100	11,488	13,282	18,199	15,245	19,211	19,037	18,208	17,824	20,298	13,662	8,464	3,147	4,268	6,061	9,008
3 National income	59,926	72,386	58,343	59,706	69,706	70,369	74,846	79,477	77,429	80,397	83,424	72,940	56,010	39,628	39,283	47,849	53,035
4 Net capital formation, inclusive total	10,517	11,650	3,683	5,802	9,691	6,823	10,644	9,734	8,859	8,168	10,082	3,879	-278	-4,427	-2,987	-1,855	800
5 Consumers' outlay, line 1 - line 2 or line 3 - line 4	49,409	60,736	54,660	53,904	60,015	63,546	64,202	69,743	68,570	72,229	73,342	69,061	56,288	44,055	42,270	49,704	52,235
6 Consumers' outlay	49,409	60,736	54,660	53,904	60,015	63,546	64,202	69,743	68,570	72,229	73,342	69,061	56,288	44,055	42,270	49,704	52,235
7 Perishable commodities	24,646	27,278	22,047	21,410	22,967	23,750	25,404	27,107	26,672	27,348	28,550	26,395	21,481	18,147	18,133	20,756	23,095
8 Semidurable commodities	10,451	12,156	9,736	10,023	11,324	10,735	11,361	11,917	12,032	12,193	12,382	10,731	9,024	6,722	6,513	7,512	8,151
9 Consumers' durable commodities	5,987	6,921	5,570	6,181	7,943	7,900	9,056	9,445	8,890	9,174	9,913	7,550	5,748	3,806	3,882	4,686	5,918
10 Total commodities, line 7 + line 8 + line 9	41,084	46,355	37,353	37,614	42,234	42,385	45,821	48,469	47,594	48,715	50,845	44,676	36,253	28,675	28,528	32,954	37,164
11 Services not embodied in new commodities, line 6 - line 10	8,325	14,381	17,307	16,290	17,781	21,161	18,381	21,274	20,976	23,514	22,497	24,385	20,035	15,380	13,742	16,750	15,071

pitals, etc.) are likely to fluctuate with business cycles. As a result a large share of the product of these service industries is embodied, in years of business prosperity, as cost in new commodities and a smaller share imputed to services not so embodied, while in years of business depression the reverse is true.

Second, the factor just mentioned, which in itself would go far to explain the rise in the value of services not embodied in new commodities in years of depression, is magnified by certain peculiarities of the estimate of national income, and hence of gross national product. The scantiness of data makes possible only rough approximations to the net value produced in several industrial divisions; and the crudity of these approximations means in general that the resulting estimates do not reflect sensitively the fluctuations that may occur. It so happens that this lack of data and the resulting insensitiveness of the estimates is particularly predominant in finance, service and miscellaneous, i.e., exactly those fields in which services are rendered jointly to producers of new commodities and to ultimate consumers and producers of services not embodied in new commodities. Since the annual estimates of capital formation are less subject to this weakness, it is quite possible that they reflect cyclical fluctuations in the areas they are supposed to measure much more sensitively than our estimates of national income and of gross national product reflect cyclical fluctuations in the final product of the economic system.

Third, in the commodity classification underlying the measurement of capital formation, several commodities were classified as finished because only minor fractions of them were consumed by business enterprises. These fractions may be consumed by enterprises producing other commodities. Such duplication is offset somewhat by the classification as unfinished of some commodities that may, to a very small extent, be consumed directly by ultimate consumers. But the important point is that the extent of duplication or deficiency in the finished commodity totals is subject to a definite cyclical change. This is a result of the fact that consumption of finished commodities by enterprises producing other finished commodities is much more sensitive to business cycles than is consumption of unfinished commodities by ultimate consumers.

Fourth, in the estimate of capital formation we assumed that inventories held by manufacturing establishments are predominantly unfinished commodities, and we did not allow for changes in them in estimating the flow of finished commodities to ultimate consumers. So far as manufacturers' inventories do include finished commodities and so far as these inventories tend to rise and decline with business cycles, the effect would be to overestimate the flow of finished commodities during years of business prosperity and to underestimate it in years of business depression.

The characteristics indicated above suggest why the differences representing the value of services not embodied in new commodities tend to be lower than would be expected in years of business expansion, and to rise in years of business contraction. This tendency may, however, be offset somewhat by one characteristic still to be mentioned. The estimates of national income and of gross national product should exclude gains and losses of business enterprises on the sale of capital assets; and they do exclude these items since 1929. But for the earlier years the available data do not allow this adjustment.

These various deficiencies of the estimates compared in Tables 12, 15 and 16 provide sufficient reason for avoiding comparisons in terms of unsmoothed annual data and for disregarding the year-to-year changes that such comparisons would reveal. But it should be noted in conclusion that while these deficiencies are likely to disturb significantly the movement of such small differences between two large totals as appear in line 11 of Appendix Table VIII and in line 4 of Table 16 they are not likely to affect seriously such large totals as those of gross or net national product, commodity flow or gross capital formation; and are not likely to disturb significantly the average magnitude of net capital formation or the striking changes over time that are observed in its volume.

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