Appendix J

RECONSTRUCTED COMMUNIST ESTIMATE OF DOMESTIC PRODUCT
AND ITS RECONCILIATION WITH THE ADJUSTED ESTIMATE, 1952-57

This appendix explains the reconstruction of the Communist estimate of domestic product and its reconciliation with the adjusted estimate for 1952-57 presented in Table 70. The four sections below will describe the data, sources, and methods used in deriving the following four major items given in the table: the reconstructed Communist estimate; adjustments of the reconstructed Communist estimate because of differences in concept, coverage, and classification; the unexplained balance; and the adjusted estimate.

RECONSTRUCTION OF COMMUNIST ESTIMATE, 1952-57

Agricultural and Farm Subsidiary Production

Since 1956, the Communists have published estimates of the gross value of agricultural and farm subsidiary production for 1952 and subsequent years. Figures of the gross value produced by some of the component groups and the percentage shares of some others in the total value are also available for 1952-55. We have pieced these data together and made up the missing percentages for 1956-57 in Table J-1.

Data on deductible costs of production have not been published by the Communists for the country as a whole. A survey of income and expenses of 856,131 farms made in 1955 indicates that the production expenses accounted for about 25 per cent of the gross value of agricultural and subsidiary production, of which about 22 per cent was for agricultural production and 3 per cent for farm subsidiary production.\(^1\) By deducting these expenses
Table J-1

COMMUNIST DATA ON GROSS VALUE OF AGRICULTURAL AND FARM SUBSIDIARY PRODUCTION, 1952-57
(in 1952 yuan)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>Million</td>
<td>Per cent</td>
<td>Million</td>
<td>Per cent</td>
<td>Million</td>
<td>Per cent</td>
</tr>
<tr>
<td>1. Gross value of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>agricultural and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>farm subsidiary</td>
<td>48.39</td>
<td>100.0</td>
<td>49.91</td>
<td>100.0</td>
<td>51.57</td>
<td>100.0</td>
</tr>
<tr>
<td>production</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Agricultural</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>production</td>
<td>38.47</td>
<td>79.5</td>
<td>39.24</td>
<td>78.6</td>
<td>40.64</td>
<td>78.8</td>
</tr>
<tr>
<td>plant products</td>
<td>33.10</td>
<td>68.4</td>
<td>33.75</td>
<td>67.6</td>
<td>34.96</td>
<td>67.6</td>
</tr>
<tr>
<td>animal products</td>
<td>5.37</td>
<td>11.1</td>
<td>5.49</td>
<td>11.0</td>
<td>5.68</td>
<td>11.0</td>
</tr>
<tr>
<td>3. Subsidiary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hunting and</td>
<td>2.08</td>
<td>4.3</td>
<td>2.14</td>
<td>4.3</td>
<td>2.27</td>
<td>4.4</td>
</tr>
<tr>
<td>collecting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preliminary</td>
<td>1.89</td>
<td>3.9</td>
<td>2.05</td>
<td>4.1</td>
<td>2.11</td>
<td>4.1</td>
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<td>processing for</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>farm household</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>consumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handicraft work</td>
<td>5.71</td>
<td>11.8</td>
<td>6.24</td>
<td>12.5</td>
<td>6.29</td>
<td>12.2</td>
</tr>
<tr>
<td>for farm household</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>consumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing of farm</td>
<td>0.24</td>
<td>0.5</td>
<td>0.25</td>
<td>0.5</td>
<td>0.26</td>
<td>0.5</td>
</tr>
<tr>
<td>products for</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>consumers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources:

Lines 1. Great Ten Years, p. 104.

from their respective gross value figures, we obtained the net value of agricultural and subsidiary production for 1952-57 given in Table J-2. Our reconstructed net value added by agriculture, and subsidiary production in 1954-55 and 1957 and the Communist estimates for 1952-53 and 1956 given at 36.19, 36.95, and 42.88 billion yuan	extsuperscript{2} are used in the reconciliation of the Communist estimate with the adjusted estimate in Table 68.

Because of the inclusion of products such as night soil and animal and green manures in both output and costs, the Communist figures of gross value of agricultural production and of the percentage shares of deductible costs in the gross value are higher than our estimates for the corresponding items.\textsuperscript{3} However, the differences between the reconstructed Communist net value figures and our estimates of net agricultural products are much smaller.\textsuperscript{4} The fact that the deductible costs of subsidiary production accounted for only 3 per cent of the gross value of agricultural and subsidiary production is easily explained, as the values of raw material costs do not exist (as in the case of hunting and fishing) or are not included in the gross value.\textsuperscript{5} The deductible costs presumably consist only of such small expenses as the repair and maintenance of processing equipment and tools.

Nonagricultural Sectors

The reconstructed Communist estimates of net value added in the non-agricultural sectors are summarized in Table J-3. The sources and methods used in the calculation of these figures are as follows:

1. \textbf{Industry}. Estimates of net value added for 1952 and 1956 are derived by multiplying the Communist estimates of national income by the proportions of national income originating in industry as given by the
Table J-2

RECONSTRUCTED COMMUNIST DATA ON NET VALUE OF AGRICULTURAL AND FARM SUBSIDIARY PRODUCTION

(billions of 1952 yuan)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gross value of agricultural and subsidiary production</td>
<td>48.39</td>
<td>49.92</td>
<td>51.57</td>
<td>55.54</td>
<td>58.29</td>
<td>60.35</td>
</tr>
<tr>
<td>2. Gross value of agricultural production</td>
<td>38.47</td>
<td>39.24</td>
<td>40.64</td>
<td>43.71</td>
<td>45.87</td>
<td>47.50</td>
</tr>
<tr>
<td>3. Deductible production expenses</td>
<td>10.65</td>
<td>10.98</td>
<td>11.35</td>
<td>12.22</td>
<td>12.82</td>
<td>13.28</td>
</tr>
<tr>
<td>4. Net value of agricultural production</td>
<td>27.82</td>
<td>28.26</td>
<td>29.29</td>
<td>31.49</td>
<td>33.05</td>
<td>34.22</td>
</tr>
<tr>
<td>6. Deductible production expenses</td>
<td>1.45</td>
<td>1.50</td>
<td>1.55</td>
<td>1.67</td>
<td>1.75</td>
<td>1.81</td>
</tr>
<tr>
<td>8. Net value of agricultural and subsidiary production</td>
<td>36.29</td>
<td>37.44</td>
<td>38.67</td>
<td>41.65</td>
<td>43.72</td>
<td>45.26</td>
</tr>
</tbody>
</table>

Notes:

Lines 1, 2 and 5. Taken from Table J-1.

Line 3. 22 per cent of line 1.

Line 4. Line 2 minus line 3.

Line 6. 3 per cent of line 1.


Table J-3

RECONSTRUCTED COMMUNIST ESTIMATES OF

NET VALUE ADDED IN NONAGRICULTURAL SECTORS, 1952-57

(billions of 1952 yuan)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Industry</td>
<td>11.00</td>
<td>14.75</td>
<td>17.15</td>
<td>18.44</td>
<td>23.43</td>
<td>25.87</td>
</tr>
<tr>
<td>Factories</td>
<td>6.45</td>
<td>8.64</td>
<td>10.15</td>
<td>10.93</td>
<td>15.69</td>
<td>17.26</td>
</tr>
<tr>
<td>Utilities</td>
<td>0.31</td>
<td>0.37</td>
<td>0.43</td>
<td>0.48</td>
<td>0.59</td>
<td>0.71</td>
</tr>
<tr>
<td>Mining</td>
<td>1.47</td>
<td>1.46</td>
<td>1.82</td>
<td>2.32</td>
<td>2.38</td>
<td>3.07</td>
</tr>
<tr>
<td>Lumbering &amp; fishing</td>
<td>0.53</td>
<td>0.68</td>
<td>0.87</td>
<td>1.03</td>
<td>1.05</td>
<td>1.37</td>
</tr>
<tr>
<td>Handicrafts</td>
<td>2.24</td>
<td>3.60</td>
<td>3.88</td>
<td>3.68</td>
<td>3.72</td>
<td>3.46</td>
</tr>
<tr>
<td>2. Construction</td>
<td>1.83</td>
<td>2.28</td>
<td>2.68</td>
<td>2.93</td>
<td>4.97</td>
<td>4.62</td>
</tr>
<tr>
<td>3. Transportation and communications</td>
<td>2.45</td>
<td>3.04</td>
<td>3.20</td>
<td>3.43</td>
<td>3.90</td>
<td>4.33</td>
</tr>
<tr>
<td>5. Total</td>
<td>24.94</td>
<td>33.09</td>
<td>35.21</td>
<td>27.15</td>
<td>46.06</td>
<td>48.27</td>
</tr>
</tbody>
</table>
The estimate for 1955 is also given by the Communists. On the basis of these three estimates of net value added and the Communist figures of gross output of industry for 1952 and 1955-56, the ratios of net value added to gross output are calculated at 32.0, 33.6, and 33.3 per cent. We assume that for 1953-54 and 1957, the ratios are equal to the average of those for 1952, 1955, and 1956, that is, 33 per cent. The gross output for 1953-54 and 1957 being known, net value added for these years can be calculated.

The estimates of net value added by factories, utilities, and mining have been derived elsewhere. The derivation of net value added by lumbering and part of fishing is explained below. The figures for handicrafts are residuals obtained by deducting those for factories, utilities, mining, lumbering, and fishing from total net value added by industry.

2. Construction. See the discussion under 1952-57 in Appendix H.

3. Transportation and communications. The Communist estimates of national income for 1952 and 1956 are given at 61.13 billion and 88.75 billion yuan, and the proportions of income originating in transportation and communications, at 4.0 and 4.4 per cent. By multiplying the national income figures by the corresponding percentages, we obtain the estimates of net value added for 1952 and 1956. Net value added for 1953-55 and 1957 are derived on the basis of the 1956 figure and the index of net value added by agriculture, factories, handicrafts, and mining given in Table 68.

4. Trade. The estimates for 1952 and 1956 are derived on the basis of Communist national income figures for 1952 and 1956 and the proportion of national income originating in trade for the same years. For 1953-55
and 1957, estimates of net value added in trade are derived by deducting
the estimates already obtained for all the agricultural and nonagricultural
sectors except trade from the Communist estimates of national income for
these years. ¹³

ADJUSTMENT OF DIFFERENCES BETWEEN RECONSTRUCTED COMMUNIST FIGURES AND
THE ADJUSTED ESTIMATE

Agricultural and Farm Subsidiary Production

Agriculture Proper. Items classified by the Communists as income from
other sectors but included in the adjusted estimate as agricultural income
are (a) cotton ginning (classified by the Communists as income from farm
subsidiary production); (b) lumbering and fishing (income derived from
modern lumber products and natural fishery products are classified by the
Communists as a part of the value of industrial production); and (c) hunting
and collecting (classified by the Communists as a part of farm subsidiary
production).

(a) Cotton ginning (Footnote a. to Table 70). Data on the costs of
ginning in 1952-57 are not available. It is known, however, that during
the pre-Communist period the costs of ginning were about ⁴ per cent of the
farm price of lint cotton. ¹⁴ By assuming that this ratio still prevailed
in 1952, the cost of ginning in 1952 can be derived by multiplying this
ratio by our estimate of the farm price of lint cotton in 1952. ¹⁵ The
resultant figure, 3.4 yuan per picul, is then multiplied by the output of
lint cotton in each year, 1952-57, ¹⁶ to obtain the value added by cotton
ginning in 1952 prices.

(b) Lumbering and fishing (Footnote b. to Table 70). The net value
added by modern lumber products is obtained by deducting costs or production
and depreciation from their gross value of output. The gross value added by modern lumber products is derived from the gross value of all lumber products and percentages of the modern sector in the total. The data and computation are given in Table J-4.

While the entire fishery production is included in our agricultural sector, it is divided by the Communists into two categories: cultured and natural fishery. The former is considered by the Communists as a part of agricultural production; the latter, a part of industrial production. The gross and net values of all fishery products for 1952-57 have been estimated in Appendix E in Table E-3. The value of the natural fisheries is derived from the total values and the percentage of the natural fisheries in the total given by the Communists. The data and computation are presented in Table J-5.

Total net value added by modern lumbering and natural fishery products in each year is the sum of figures given in the last lines of Tables J-4 and J-5.

(c) Hunting and collecting (Footnote c. to Table 70). The net value added by wild animals caught, wild plants and herbs collected, etc., is derived from the gross value of the output of the group\(^ {17} \) on the assumption that the ratio between the net and gross values in each year during 1952-57 was the same as for all farm subsidiary production.\(^ {18} \)

Subsidiary. This item does not appear in our estimates. The components of this item are either included in the adjusted estimate as a part of income from other sectors or are not included at all. Those in the former category are: (a) hunting and collecting (Footnote c. to Table 70), (b) cotton ginning (Footnote a. to Table 70), and (c) other handicraft works.
Table J-4

NET VALUE ADDED BY MODERN LUMBER, 1952-57

(in 1952 prices)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gross value of all lumber products (billions of yuan)</td>
<td>0.48</td>
<td>0.80</td>
<td>1.01</td>
<td>1.15</td>
<td>0.99</td>
<td>1.34</td>
</tr>
<tr>
<td>2. Percentage in modern sector (per cent)</td>
<td>17</td>
<td>22</td>
<td>27</td>
<td>32</td>
<td>37</td>
<td>42</td>
</tr>
<tr>
<td>3. Gross value of modern lumber products (billions of yuan)</td>
<td>0.08</td>
<td>0.18</td>
<td>0.27</td>
<td>0.37</td>
<td>0.37</td>
<td>0.56</td>
</tr>
<tr>
<td>4. Net value of modern lumber products (billions of yuan)</td>
<td>0.07</td>
<td>0.16</td>
<td>0.24</td>
<td>0.33</td>
<td>0.33</td>
<td>0.51</td>
</tr>
</tbody>
</table>

Notes:

Line 1. See the discussion following Table E-4 in Appendix E.

Line 2. Percentages for 1952 and 1957 are given in TKP, Peiping, October 1, 1957. Those for other years are interpolations from the 1952 and 1957 figures on the assumption that annual increment was even over the 1952-57 period.

Line 3. Line 1 times line 2.

Line 4. Net values are obtained by deducting 10 per cent from the gross values for costs of production and depreciation. This deduction doubles the 5 per cent deduction (including 3 per cent for costs of production and 2 per cent for depreciation) for all lumber products discussed in Appendix E because of more expensive equipment and facilities being used in modern lumbering.
### Table J-5

**Net Value Added by Natural Fisheries, 1952-57**

(billions of 1952 yuan)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gross value of all</td>
<td>0.63</td>
<td>0.72</td>
<td>0.87</td>
<td>0.96</td>
<td>1.01</td>
<td>1.18</td>
</tr>
<tr>
<td>fishery products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gross value of cultured</td>
<td>0.14</td>
<td>0.16</td>
<td>0.19</td>
<td>0.21</td>
<td>0.23</td>
<td>0.26</td>
</tr>
<tr>
<td>fishery products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Gross value of natural</td>
<td>0.49</td>
<td>0.56</td>
<td>0.68</td>
<td>0.75</td>
<td>0.78</td>
<td>0.92</td>
</tr>
<tr>
<td>fishery products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Net value of all</td>
<td>0.59</td>
<td>0.67</td>
<td>0.81</td>
<td>0.89</td>
<td>0.93</td>
<td>1.10</td>
</tr>
<tr>
<td>fishery products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Net value of natural</td>
<td>0.46</td>
<td>0.52</td>
<td>0.63</td>
<td>0.70</td>
<td>0.72</td>
<td>0.86</td>
</tr>
<tr>
<td>fishery products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

**Line 1.** Obtained by multiplying the output of fishery products, given in Table 33, by the 1952 price of fishery products of 19 yuan per picul, as given in Appendix D. These gross values are also shown in Table 36.

**Line 2.** Gross value in 1957 is estimated on the basis of a statement that 22 per cent of all fishery products was pond-reared in that year. See Chang Yu-tien, "Fishermen's Record Hauls," *Peking Review*, No. 11, 1959, p. 13. Percentages for the other years are assumed to be the same as for 1957.

**Line 3.** Line 1 minus line 2.

**Lines 4 and 5.** Obtained by deducting 7 per cent (5 per cent for costs of production and 2 per cent for depreciation; see Fishery Production in Appendix E) from the corresponding gross values given in lines 1 and 3.
The first two have been discussed above; the last one will be discussed here together with the portion of subsidiary production that is not included in our estimate.

The components of farm subsidiary production and their gross values for 1952-57 in constant 1952 prices have been given in Table J-1. Aside from hunting and collecting, which has been discussed above, the gross values of the other subgroups are used to derive the net values of the respective subgroups on the assumption that the ratio of net value to gross value for each subgroup is equal to the ratio (given earlier in this Appendix) for farm subsidiary production as a whole. The net values of the respective subgroups thus derived are shown in Table J-6.

A large part of the net values of production in these subgroups is not considered as income in the adjusted estimate. For instance, in "preliminary processing for farm household consumption," work such as salting vegetables, making bean curd, farm slaughtering of animals, etc.; and in "handicraft work for farm household consumption," work such as making clothes, shoes, stockings, etc., are all not included in the adjusted estimate. Detailed data on the values of the components of these subgroups are not available. We have assumed that the portions not included in the adjusted estimate constituted about 80 per cent of each of the two subgroups. The resultant figures (Footnote d. to Table 70) are shown in Table J-7.

The remaining 20 per cent of net value added by these two subgroups, and net value added by "processing of farm products for consumers" (excluding the net value added by cotton ginning which is included in our "agriculture proper") are all included in the adjusted estimate as part of the net value added by handicrafts. They are shown in Table J-8.
Table J-6

NET VALUE ADDED: SELECTED SUBGROUPS, FARM

SUBSIDIARY PRODUCTION, 1952-57

(billions of 1952 yuan)

<table>
<thead>
<tr>
<th>Year</th>
<th>Preliminary processing for farm household consumption</th>
<th>Handicraft work for farm household consumption</th>
<th>Processing of farm products for consumers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952</td>
<td>1.61</td>
<td>4.88</td>
<td>0.21</td>
</tr>
<tr>
<td>1953</td>
<td>1.76</td>
<td>5.36</td>
<td>0.22</td>
</tr>
<tr>
<td>1954</td>
<td>1.81</td>
<td>5.40</td>
<td>0.22</td>
</tr>
<tr>
<td>1955</td>
<td>1.87</td>
<td>5.48</td>
<td>0.28</td>
</tr>
<tr>
<td>1956</td>
<td>1.95</td>
<td>5.76</td>
<td>0.30</td>
</tr>
<tr>
<td>1957</td>
<td>2.02</td>
<td>5.96</td>
<td>0.31</td>
</tr>
</tbody>
</table>
Table J-7

COMMUNIST NET VALUE:  FARM SUBSIDIARY PRODUCTION

NOT INCLUDED IN HANDICRAFT ESTIMATES

(billions of 1952 yuan)

<table>
<thead>
<tr>
<th>Year</th>
<th>Preliminary processing</th>
<th>Handicrafts</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952</td>
<td>1.29</td>
<td>3.90</td>
<td>5.19</td>
</tr>
<tr>
<td>1953</td>
<td>1.41</td>
<td>4.29</td>
<td>5.70</td>
</tr>
<tr>
<td>1954</td>
<td>1.45</td>
<td>4.32</td>
<td>5.77</td>
</tr>
<tr>
<td>1955</td>
<td>1.50</td>
<td>4.38</td>
<td>5.88</td>
</tr>
<tr>
<td>1956</td>
<td>1.56</td>
<td>4.61</td>
<td>6.17</td>
</tr>
<tr>
<td>1957</td>
<td>1.62</td>
<td>4.77</td>
<td>6.39</td>
</tr>
</tbody>
</table>
Table J-8

COMMUNIST NET VALUE OF CERTAIN FARM SUBSIDIARY

PRODUCTION INCLUDED IN OUR HANDICRAFTS ESTIMATES

(billions of 1952 yuan)

<table>
<thead>
<tr>
<th>Year</th>
<th>Preliminary processing</th>
<th>Handicrafts</th>
<th>Processing for consumers</th>
<th>Cotton ginning</th>
<th>Total (excluding cotton ginning)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952</td>
<td>0.32</td>
<td>0.98</td>
<td>0.21</td>
<td>0.09</td>
<td>1.42</td>
</tr>
<tr>
<td>1953</td>
<td>0.35</td>
<td>1.07</td>
<td>0.22</td>
<td>0.08</td>
<td>1.56</td>
</tr>
<tr>
<td>1954</td>
<td>0.36</td>
<td>1.08</td>
<td>0.22</td>
<td>0.07</td>
<td>1.59</td>
</tr>
<tr>
<td>1955</td>
<td>0.37</td>
<td>1.10</td>
<td>0.23</td>
<td>0.10</td>
<td>1.65</td>
</tr>
<tr>
<td>1956</td>
<td>0.39</td>
<td>1.15</td>
<td>0.30</td>
<td>0.10</td>
<td>1.74</td>
</tr>
<tr>
<td>1957</td>
<td>0.40</td>
<td>1.19</td>
<td>0.31</td>
<td>0.11</td>
<td>1.79</td>
</tr>
</tbody>
</table>
Manufacturing

Factories. There is no difference between the Communist and the adjusted estimates.

Handicrafts. The value of certain handicraft works considered by the Communists as a part of farm subsidiary production is included in the adjusted estimate of the value of handicrafts. See discussion on subsidiary, above.

Utilities. No difference.

Mining. No difference.

Lumbering and fishing. Classified by the Communists as a part of the value of industrial output, but included in the adjusted estimate of agricultural income. See discussion on agriculture proper above.

Construction. No difference.

Transportation and communications. Net value added by passenger transportation is not included in the Communist estimate, but is included in our estimates. The figure for this item is obtained by taking the difference between the adjusted estimate and the reconstructed Communist estimate for transportation and communications as given in Table 68 and Table J-3.

Trade. No difference.

Government, Finance, Services, Residential Rent, and Work Brigades. Net value added is not included in the Communist estimate, but is included in the adjusted estimate. The figure for this item is taken from Table 68.

UNEXPLAINED BALANCE

These figures represent the difference between the adjusted estimates of domestic product and the sum of reconstructed Communist estimates, and the adjustments because of differences in concept, coverage, and classification.

ADJUSTED ESTIMATE

These estimates are taken from Table 68.
FOOTNOTES TO APPENDIX J


2. See Appendix E, Table E-11. These figures are the only ones available for 1952-57.

3. Compare Table J-2, lines 2 and 3, with corresponding figures given in Table 36.

4. Compare line 4 of Table J-2 with the last line of Table 36.

5. For instance, in the case of preliminary processing of plant products for farm household consumption or for consumers, the value of raw materials used is believed to be excluded from the gross value of subsidiary production but is included in the gross value of agricultural production. SSB, "Several Important Problems of Calculating Total Value of Agricultural Production," *TCKTTH*, No. 22, 1956, pp. 1-2.


9. See Appendix F, Table F-15.

10. See Table 68.


12. Ibid.

13. For Communist estimates of national income in 1952-57, see Table 69.
14. Shanghai Bank of Commerce and Savings, Mien (Cotton), Shanghai, 1931, p. 54; Honan Cotton Improvement Bureau, Honan mien-yeh (Cotton Industry of Honan), Shanghai, 1936, pp. 35-47; and Chi Chun-mien, Chih-mien shou-tse (Handbook of Cotton Planting), Shanghai, 1951, p. 91.

15. For the farm price of lint cotton in 1952, see Appendix D, Table D-4.

16. For output of lint cotton in 1952-57, see Table 33.

17. As given in Table J-1.

18. The calculation of the ratio of net value to gross value of subsidiary production in each year is based on data given in Table J-2.

19. For description of the components in these subgroups, see TCKT, No. 4, 1957, p. 3; and Editorial Committee of the Statistical Press, Handbook of Agricultural Statistical Work, Peiping, Tung-chi Chu-pan-she, 1956 (English translation), pp. 31-32.
Appendix K

COMPUTATIONS FOR THE 1958-59 ESTIMATE OF DOMESTIC PRODUCT

This appendix presents the detailed computations for "A Conjectural Estimate of Domestic Product, 1958-9," in Chapter III, summarized in Table 8.

Table K-1 summarizes in detail our estimate of domestic product for 1958-59 and the adjusted estimate based primarily on Communist data. The derivation of the estimates in this table is explained below.

AGRICULTURE

Estimates of gross output and value added in the agricultural sector in 1958-59 are given in Table K-2.

Gross Value of Output

Gross value of output is primarily obtained by multiplying the physical quantities of output of agricultural products in 1958-59 by their respective prices in 1952 given in Appendix D. The adjusted and authors' estimates of output are presented in Table K-3. The reader may wish to compare these estimates with the figures in Table 33. The estimates are derived as shown below.

Adjusted Estimate: Plant Products. Except for sesame, cottonseed, hemp crops, tobacco, and vegetables, the output of all plant products in 1958 is taken from Great Ten Years, pp. 105, 109, 110, and 112. The output of sesame in 1958 is given in NCNA, Peiping, January 7, 1959. Output of cottonseed is assumed in Appendix A to be twice the output of ginned cotton. The output of hemp crops in 1958 is derived by multiplying the corresponding figure for 1957 (9.9 million piculs given in Appendix C under Hemp Crops)
Table K-1
DOMESTIC PRODUCT BY INDUSTRIAL ORIGIN, 1958-59
(billions of 1952 yuan)

<table>
<thead>
<tr>
<th>Value added</th>
<th>Authors' Estimate 1958</th>
<th>Authors' Estimate 1959</th>
<th>Adjusted Estimate 1958</th>
<th>Adjusted Estimate 1959</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>40.09</td>
<td>42.13</td>
<td>51.08</td>
<td>56.00</td>
</tr>
<tr>
<td>Factories</td>
<td>18.93</td>
<td>25.06</td>
<td>30.35</td>
<td>43.56</td>
</tr>
<tr>
<td>Handicrafts</td>
<td>6.00</td>
<td>6.48</td>
<td>7.76</td>
<td>8.69</td>
</tr>
<tr>
<td>Mining</td>
<td>4.19</td>
<td>5.34</td>
<td>5.55</td>
<td>7.16</td>
</tr>
<tr>
<td>Utilities</td>
<td>0.97</td>
<td>1.32</td>
<td>0.97</td>
<td>1.32</td>
</tr>
<tr>
<td>Construction</td>
<td>6.24</td>
<td>7.77</td>
<td>6.24</td>
<td>7.77</td>
</tr>
<tr>
<td>Modern transportation and communications</td>
<td>4.13</td>
<td>5.17</td>
<td>6.66</td>
<td>9.07</td>
</tr>
<tr>
<td>Old-fashioned transportation</td>
<td>2.87</td>
<td>2.83</td>
<td>3.72</td>
<td>3.56</td>
</tr>
<tr>
<td>Trade</td>
<td>12.38</td>
<td>13.56</td>
<td>19.31</td>
<td>23.47</td>
</tr>
<tr>
<td>Government administration</td>
<td>4.87</td>
<td>6.11</td>
<td>4.87</td>
<td>6.11</td>
</tr>
<tr>
<td>Finance</td>
<td>2.00</td>
<td>2.29</td>
<td>2.91</td>
<td>3.58</td>
</tr>
<tr>
<td>Personal services</td>
<td>0.51</td>
<td>0.51</td>
<td>0.51</td>
<td>0.51</td>
</tr>
<tr>
<td>Residential rent</td>
<td>2.60</td>
<td>2.67</td>
<td>2.60</td>
<td>2.67</td>
</tr>
<tr>
<td>Work brigades</td>
<td>2.50</td>
<td>3.27</td>
<td>2.50</td>
<td>3.27</td>
</tr>
<tr>
<td><strong>Net domestic product</strong></td>
<td><strong>108.28</strong></td>
<td><strong>124.52</strong></td>
<td><strong>144.97</strong></td>
<td><strong>176.75</strong></td>
</tr>
<tr>
<td>Depreciation</td>
<td>6.45</td>
<td>7.91</td>
<td>8.97</td>
<td>11.73</td>
</tr>
<tr>
<td><strong>Gross domestic product</strong></td>
<td><strong>114.73</strong></td>
<td><strong>132.43</strong></td>
<td><strong>153.94</strong></td>
<td><strong>188.48</strong></td>
</tr>
</tbody>
</table>
Table K-2
GROSS VALUE OF OUTPUT AND NET VALUE ADDED BY
AGRICULTURE, 1958-59
(billions of 1952 yuan)

<table>
<thead>
<tr>
<th></th>
<th>Authors' Estimate</th>
<th></th>
<th>Adjusted Estimate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1958</td>
<td>1959</td>
<td>1958</td>
<td>1959</td>
</tr>
<tr>
<td>Gross value of output</td>
<td>46.42</td>
<td>48.74</td>
<td>59.04</td>
<td>64.64</td>
</tr>
<tr>
<td>Plant products</td>
<td>33.87</td>
<td>35.30</td>
<td>42.85</td>
<td>46.57</td>
</tr>
<tr>
<td>Animal products</td>
<td>6.02</td>
<td>6.11</td>
<td>8.98</td>
<td>9.87</td>
</tr>
<tr>
<td>Forest products</td>
<td>2.44</td>
<td>2.75</td>
<td>2.44</td>
<td>2.75</td>
</tr>
<tr>
<td>Fishery products</td>
<td>1.54</td>
<td>1.91</td>
<td>1.54</td>
<td>1.91</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>2.54</td>
<td>2.67</td>
<td>3.24</td>
<td>3.54</td>
</tr>
<tr>
<td>Gross value added</td>
<td>41.02</td>
<td>43.10</td>
<td>52.27</td>
<td>57.29</td>
</tr>
<tr>
<td>Plant products</td>
<td>30.11</td>
<td>31.38</td>
<td>38.09</td>
<td>41.40</td>
</tr>
<tr>
<td>Animal products</td>
<td>4.81</td>
<td>4.87</td>
<td>7.46</td>
<td>8.26</td>
</tr>
<tr>
<td>Forest products</td>
<td>2.37</td>
<td>2.67</td>
<td>2.37</td>
<td>2.67</td>
</tr>
<tr>
<td>Fishery products</td>
<td>1.47</td>
<td>1.81</td>
<td>1.47</td>
<td>1.81</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>2.26</td>
<td>2.38</td>
<td>2.88</td>
<td>3.15</td>
</tr>
<tr>
<td>Depreciation</td>
<td>0.93</td>
<td>0.98</td>
<td>1.18</td>
<td>1.29</td>
</tr>
<tr>
<td>Net value added</td>
<td>40.09</td>
<td>42.13</td>
<td>51.08</td>
<td>56.00</td>
</tr>
</tbody>
</table>
### Table K-3

**OUTPUT OF AGRICULTURAL PRODUCTS, 1958-59**

<table>
<thead>
<tr>
<th>Plant Products</th>
<th>Authors' Estimate</th>
<th>Adjusted Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1958</td>
<td>1959</td>
</tr>
<tr>
<td>Food crops (million piculs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paddy rice</td>
<td>1720.00</td>
<td>1760.00</td>
</tr>
<tr>
<td>Wheat</td>
<td>440.00</td>
<td>450.00</td>
</tr>
<tr>
<td>Miscellaneous food crops</td>
<td>940.00</td>
<td>960.00</td>
</tr>
<tr>
<td>Potatoes (in natural weight)</td>
<td>2740.00</td>
<td>2800.00</td>
</tr>
<tr>
<td>Soybeans (million piculs)</td>
<td>190.00</td>
<td>200.00</td>
</tr>
<tr>
<td>Oil-bearing crops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(million piculs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peanuts</td>
<td>56.00</td>
<td>61.20</td>
</tr>
<tr>
<td>Rapeseed</td>
<td>81.00</td>
<td>81.70</td>
</tr>
<tr>
<td>Sesame</td>
<td>11.00</td>
<td>11.00</td>
</tr>
<tr>
<td>Cottonseed</td>
<td>69.40</td>
<td>80.30</td>
</tr>
<tr>
<td>Plant fibers (million piculs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cotton</td>
<td>34.70</td>
<td>40.20</td>
</tr>
<tr>
<td>Hemp crops</td>
<td>10.70</td>
<td>10.70</td>
</tr>
<tr>
<td>Other industrial crops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(million piculs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar cane</td>
<td>270.50</td>
<td>283.30</td>
</tr>
<tr>
<td>Sugar beets</td>
<td>58.00</td>
<td>73.70</td>
</tr>
<tr>
<td>Tobacco</td>
<td>19.60</td>
<td>21.50</td>
</tr>
<tr>
<td>Tea</td>
<td>2.80</td>
<td>3.20</td>
</tr>
<tr>
<td>Vegetables (billion 1952 yuan)</td>
<td>1.52</td>
<td>1.59</td>
</tr>
<tr>
<td>Fruits (million piculs)</td>
<td>78.00</td>
<td>85.00</td>
</tr>
<tr>
<td>Animal Products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase in number of live-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>stock (billion 1952 yuan)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large livestock</td>
<td>0.09</td>
<td>0.03</td>
</tr>
<tr>
<td>Sheep and goats</td>
<td>0.08</td>
<td>0.03</td>
</tr>
<tr>
<td>Hogs</td>
<td>0.09</td>
<td>0.11</td>
</tr>
<tr>
<td>Poultry</td>
<td>0.03</td>
<td>0.04</td>
</tr>
</tbody>
</table>
Table K-3 (continued)

<table>
<thead>
<tr>
<th></th>
<th>Authors' Estimate</th>
<th>Adjusted Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1958</td>
<td>1959</td>
</tr>
<tr>
<td><strong>Livestock and poultry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>utilized (million head)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large livestock</td>
<td>0.58</td>
<td>0.58</td>
</tr>
<tr>
<td>Sheep and goats</td>
<td>0.33</td>
<td>0.35</td>
</tr>
<tr>
<td>Hogs</td>
<td>3.23</td>
<td>3.31</td>
</tr>
<tr>
<td>Poultry</td>
<td>0.55</td>
<td>0.59</td>
</tr>
<tr>
<td><strong>Other animal products</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eggs (billion 1952 yuan)</td>
<td>0.57</td>
<td>0.65</td>
</tr>
<tr>
<td>Wool (million piculs)</td>
<td>1.62</td>
<td>1.68</td>
</tr>
<tr>
<td>Silk cocoons (million piculs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domesticated</td>
<td>1.69</td>
<td>1.69</td>
</tr>
<tr>
<td>Wild</td>
<td>1.14</td>
<td>1.14</td>
</tr>
<tr>
<td><strong>Forest Products</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tung nuts (million piculs)</td>
<td>15.7</td>
<td>15.7</td>
</tr>
<tr>
<td>Timber (million cubic meters)</td>
<td>35.00</td>
<td>41.20</td>
</tr>
<tr>
<td>Other forest products (billion 1952 yuan)</td>
<td>0.64</td>
<td>0.65</td>
</tr>
<tr>
<td><strong>Fishery Products</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(million piculs)</td>
<td>81.20</td>
<td>100.36</td>
</tr>
</tbody>
</table>

Notes and Sources:

\(^a\) Gross output given in Table K-5 divided by 7 yuan/picul given in Appendix D.

\(^b\) Gross output given in Table K-5 divided by the average price of the three oilseeds of 10.9 yuan/picul. This price is derived from data on output and the gross value of output in 1957 given in Appendixes C and E.
by an index computed at 108 per cent in 1958 with 1957 as 100 on the
basis of the output of flax in 1957-58 given in Appendix C and People's
Daily, August 27, 1959. Similarly, the output of tobacco is derived by
using the 1957 output figure (13.2 million piculs given in Appendix C).
The output index of tobacco is assumed to be the same as that for cured
tobacco computed from data given in Great Ten Years, p. 109. The output
of vegetables in 1958 is derived by the same procedure as for 1952-57,
that is, by assuming that gross output of vegetables amounts to 4.8 per
cent of the output of all other plant products except fruits.¹

The total output of food crops in 1959 is given in People's Daily,
January 23, 1960. Production of food crops by the four major categories
is derived on the assumption that the percentage composition of total
food crops output in 1959 was the same as in 1958. The figures for soy-
beans and cotton in 1959 are also given in the same source. Output of
peanuts is derived on the basis of the 1958 output given at 56 million
piculs and the output index given at 109.2 per cent in 1959 with 1958 as
100 in Peking Home Service (a Communist radio broadcast), January 24,
1960. The output of rapeseed, sesame, and hemp crops in 1959 is assumed
to be the same as the corresponding output in 1958. The 1959 output of
cottonseed is assumed to be twice the output of ginned cotton. The
output of sugar cane, sugar beets, cured tobacco, and tea in 1959 are
3, 27, 11, and 8 per cent higher than those for 1958 (ibid.). The 1959
figures are computed on the basis of these indexes and the 1958 output.
The 1959 output of vegetables is derived by the same procedure as used
for 1958. For lack of a better alternative, the output of fruits in
1959 is assumed to have increased from 1958 in proportion to that of all
plant products (except vegetables) over the same period.
Animal Products. The gross value of the increase in the number of large livestock is derived at 91 and 26 million 1952 yuan for 1958 and 1959, on the basis of the gross value of year-end total number of large livestock in 1957, computed at 6,509 million yuan from data given in Appendix C, Table C-2, the discussion on livestock in Appendix D, and the annual percentage increase in number in 1958-59 reported at 1.4 and 0.4 per cent in Great Ten Years, p. 117; and People's Daily, January 23, 1960. Increases in the number of sheep and goats in 1958-59 are derived at 10.4 and 3.6 million head from the respective total numbers in 1957-59 given in the same sources. Multiplying the increases by the respective 1952 prices of 8 yuan per head given in Appendix D, we obtain the gross value of increase at 83 and 29 million yuan in 1958 and 1959. From the total number of hogs in 1957-59, 145.9, 160.0, and 180.0 million head, the increase in the number of hogs in 1958-59 can be calculated at 14.1 and 20.0 million head. The 1952 prices of hogs, 46 yuan per head, given in Appendix D, and the gross value of increase in hogs in 1958-59 amounts to 649 and 920 million yuan. The increase in poultry in 1958-59 is assumed to be in proportion to the increase in number of livestock over the same period (given in Appendix E, Table E-6) and is based on the 483 million yuan given in Table K-4.

Gross value of large livestock, sheep and goats, and hogs utilized are derived by multiplying the corresponding estimates for 1957 by the indexes of the respective mid-year total numbers in 1958-59 with 1957 as 100. The 1957 figures are taken from Appendix E, Table E-7. The mid-year totals for 1958-59 are computed by averaging the totals at the beginning and end of the year for 1957-59 given in Appendix C, Table C-2; Great Ten Years, p. 117; and People's Daily, January 23, 1960. It is
Table K-4
TOTAL NUMBER AND GROSS VALUE OF LIVESTOCK AND POULTRY
1957-59

<table>
<thead>
<tr>
<th></th>
<th>1957</th>
<th>1958</th>
<th>1959</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total number (million head)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year-end total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large livestock</td>
<td>83.9</td>
<td>85.1</td>
<td>85.4</td>
</tr>
<tr>
<td>Sheep and goats</td>
<td>98.5</td>
<td>108.9</td>
<td>112.5</td>
</tr>
<tr>
<td>Hogs</td>
<td>145.9</td>
<td>160.0</td>
<td>180.0</td>
</tr>
<tr>
<td>Mid-year total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large livestock</td>
<td>84.3</td>
<td>84.5</td>
<td>85.2</td>
</tr>
<tr>
<td>Sheep and goats</td>
<td>97.7</td>
<td>103.7</td>
<td>110.7</td>
</tr>
<tr>
<td>Hogs</td>
<td>114.0</td>
<td>153.0</td>
<td>170.0</td>
</tr>
<tr>
<td><strong>Gross value of livestock and</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>poultry at mid-year (million yuan)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large livestock</td>
<td>6,532</td>
<td>6,548</td>
<td>6,602</td>
</tr>
<tr>
<td>Sheep and goats</td>
<td>782</td>
<td>830</td>
<td>886</td>
</tr>
<tr>
<td>Hogs</td>
<td>5,244</td>
<td>7,038</td>
<td>7,820</td>
</tr>
<tr>
<td>Poultry</td>
<td>483</td>
<td>555</td>
<td>589</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>13,041</td>
<td>14,971</td>
<td>15,897</td>
</tr>
<tr>
<td><strong>Gross value of livestock and</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>poultry utilized (million yuan)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large livestock</td>
<td>574</td>
<td>575</td>
<td>580</td>
</tr>
<tr>
<td>Sheep and goats</td>
<td>313</td>
<td>332</td>
<td>354</td>
</tr>
<tr>
<td>Hogs</td>
<td>4,195</td>
<td>5,630</td>
<td>6,256</td>
</tr>
<tr>
<td>Poultry</td>
<td>483</td>
<td>555</td>
<td>589</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6,565</td>
<td>7,092</td>
<td>7,779</td>
</tr>
</tbody>
</table>
assumed that the total gross value of poultry increased from 1957 to 1959 in proportion to gross value of all livestock over the same period and that the entire mid-year stock in a given year is utilized.²

Table K-4 summarizes the data on the number of livestock and, for later computation of feed expenses, the data on gross value of livestock and poultry at mid-year, derived by multiplying the mid-year total by the prices given in the discussion on livestock and poultry in Appendix D.

The gross value of poultry eggs in 1958-59 is derived on the basis of the estimate for 1952 (0.47 billion 1952 yuan, given in Appendix E, Table E-2) and the index of the total gross value of poultry in 1958-59 with 1952 as 100 (computed from above data and from the discussion under Poultry, 1952-57, in Appendix E). The gross value of wool in 1958-59 is estimated from the gross value of wool output in 1957, given in Appendix C, Table C-5, and the index of the total number of sheep and goats given above. The output of domesticated and wild cocoons in 1958 is taken from Great Ten Years, p. 110, assuming the same figure for 1959.

Forest Products. Output of tung nuts in 1958 is estimated at 15.7 million piculs by dividing the output of tung oil in 1958 given at 4.4 million piculs in People's Daily, December 14, 1958, by the quantity of tung oil produced from one picul of tung nuts given at 0.28 picul in Appendix A. For lack of information, we assume that the output in 1959 is the same as in 1958. The output of timber in 1958-59 is given in Great Ten Years, p. 85, and People's Daily, January 23, 1960. The gross value of other forest products in 1958-59 is assumed to have increased from 1957 in proportion to total population. The 1957 estimate of other forest products is given under Timber and Other Forest Products in Appendix E.
Fishery Products. Output in 1958 is given at 81.20 million piculs in People's Daily, March 13, 1959. The 1959 output is reported at 23.6 per cent above the 1958 level. Ibid., January 23, 1960. The output in 1959 is calculated at 100.36 million piculs.

Miscellaneous Agricultural Products. Gross value of miscellaneous agricultural products in 1958-59 is derived on the assumption that the ratio of the four major categories of agricultural products to miscellaneous agricultural products in 1958-59 remained the same as in 1957.³

The Authors' Estimate. Except for food crops, soybeans, oil-bearing crops, cotton, hogs, vegetables, and miscellaneous agricultural products, the adjusted estimates of output and the authors' estimates are the same. The gross value of vegetables and miscellaneous agricultural products is derived on the same assumption as the adjusted estimate, but the basic data are now different. The other figures are obtained as follows.

Food Crops. Total consumption of food crops is estimated at 3,159 and 3,232 million piculs for 1958-59 by multiplying total population in 1958-59 (650 and 665 million) by the per capita consumption of food crops in 1957 given at 486 piculs in Table 32. For total population in 1958, see Ts'ai-cheng (Public Finance), Peiping, No. 18, 1959, p. 23. The 1959 population is estimated on the basis of the 1958 figure and the average annual rate of increase in total population in 1953-56, that is, 2.22 per cent per annum, derived from data given in TCKT, No. 11, 1957, p. 25. Total output of food crops is derived by dividing total consumption by 83.7 per cent, the percentage of total food crops output used for food in 1957, also given in Table 32. Total output in 1958-59 is then divided into four major categories (rice, wheat, miscellaneous
food crops, and potatoes) on the assumption that the proportion of each
category in total production is the same as that derived from the adjusted
figures for 1958.

Soybeans and Oil-bearing Crops. Exports of soybeans and oil seeds
in 1957-59 are first roughly estimated. The exports in 1957 are then
deducted from total gross output given in Appendix E, Table E-1, to
arrive at total domestic consumption in 1957. Estimates of total con-
sumption in 1958-59 are obtained on the assumption that per capita
consumption of soybeans and oil seeds in these years remained the same
as in 1957. Total population in 1957-59 being given above, total con-
sumption in 1958-59 can be calculated. Total consumption and exports
sum up to total gross output. Of this total output of soybeans and oil
seeds, gross output of cottonseed in 1957-59 can be derived by multiplying
the output of cottonseed obtained at twice the output of ginned cotton in
1957-59, given in Great Ten Years, p. 105 and this appendix below, by the
price of cottonseed given at 3.6 yuan per picul in the discussion on
Cottonseed in Appendix D. The ratio of cottonseed to ginned cotton is
discussed under Cottonseed in Appendix A. The breakdown of the residual
into figures for soybeans and other oil-bearing crops is made on the
assumption that the percentage share of each group in the residual is
the same as that derived from the adjusted estimate of output of soybeans,
peanuts, rapeseed, and sesame already obtained above. The details are
presented in Table K-5.

Cotton. Output of cotton in 1958-59 is derived on the basis of
the 1957 output (32.8 million piculs given in Great Ten Years, p. 105)
and an index of the authors' estimates of gross output of cotton yarn,
Table K-5
GROSS VALUE OF OUTPUT, SOYBEANS AND OIL SEEDS,
1957-59, THE AUTHORS' ESTIMATE
(millions of 1952 yuan)

<table>
<thead>
<tr>
<th></th>
<th>1957</th>
<th>1958</th>
<th>1959</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exports&lt;sup&gt;a&lt;/sup&gt;</td>
<td>296</td>
<td>241</td>
<td>309</td>
</tr>
<tr>
<td>Oil seeds</td>
<td>98</td>
<td>63</td>
<td>-</td>
</tr>
<tr>
<td>Soybeans</td>
<td>198</td>
<td>178</td>
<td>-</td>
</tr>
<tr>
<td>Domestic consumption&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2,171</td>
<td>2,215</td>
<td>2,266</td>
</tr>
<tr>
<td>Gross output&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2,467</td>
<td>2,456</td>
<td>2,575</td>
</tr>
<tr>
<td>Soybeans</td>
<td>1,407</td>
<td>1,324</td>
<td>1,394</td>
</tr>
<tr>
<td>Cottonseed</td>
<td>236</td>
<td>250</td>
<td>289</td>
</tr>
<tr>
<td>Peanuts, rapeseed, and sesame</td>
<td>824</td>
<td>883</td>
<td>891</td>
</tr>
</tbody>
</table>

Notes and Sources:
- Not available.

<sup>a</sup>The 1957-58 figures are the sums of exports to the USSR and Western countries as given in Economic Planning Administration, Ministry of Foreign Trade, USSR, Foreign Trade of the USSR, 1958 (Statistical Survey), Moscow, 1959 (English translation), p. 190, and U.S. Department of State, Summary of East-West Trade in 1958, U.S. Government Printing Office, Washington, D.C., 1960, p. 46. The 1959 figure is derived on the assumption that total exports increased from 1958 at the same rate as exports of oil seeds to Soviet Russia over the same period given in China Trade and Economic Newsletter, October, 1960.
Notes and Sources to Table K-5 (continued):

bThe figure for 1957 is derived by deducting exports from gross value of output given in Table E-1, Appendix E. The 1958-59 figures are derived on the assumption that domestic consumption increased from 1957 to 1959 at the same rate as total population (given earlier) over the same period.

cTotal gross output is the sum of exports and domestic consumption. Output of cottonseed is calculated at twice the output of cotton given in the text. Outputs of soybeans and other oil seeds are derived on the assumption that their share in the total gross output (minus cottonseed) is the same as that derived from the corresponding adjusted estimate.
cotton cloth, and clothing and knitted goods in 1957-59, given in Table 39, and Table K-7 in this appendix.

**Hogs.** The total number of hogs at the end of the year for 1958-59 are assumed to have increased from 1957 at the same rate as total population over the same period. The year-end total for 1957 being 101.6 million head (Appendix C, Table C-2), the total for 1958-59 is calculated at 103.6 and 106.0 million head. Increases in the number of hogs in 1958-59 are, therefore, 2.0 and 2.4 million head. Multiplying the latter figures by the 1952 price of 46 yuan per head (included in the discussion on Chickens, Ducks, and Geese in Appendix D), we derive the gross value of the increase in the number of hogs in 1958-59 at 92.0 and 110.4 million yuan. By a similar procedure, the total number of hogs at the middle of the year for 1958-59 is derived at 87.9 and 89.9 million head on the basis of the 1957 estimate of 86.2 million head given in Appendix C, Table C-2, and the percentage increase in total population in 1957-59. Assuming the slaughter rate to be 80 per cent of the mid-year total, the number of hogs utilized in 1958-59 is derived at 70.3 and 71.9 million head, and the gross value at 3.23 and 3.31 billion yuan.

**GROSS VALUE ADDED, DEPRECIATION, AND NET VALUE ADDED**

The percentages of deductible costs in total gross output for the five categories are assumed to be the same as for 1952-57 given in Appendix E. Gross value added is derived by deducting the costs of production from the gross value of output. Allowing 2 per cent of gross value of output for depreciation, we obtain the estimates of net value added.
Factories

The derivation of net value added by factories in 1958-59 given in Table K-1 is explained in Table K-6. For expository convenience, the adjusted estimate is first explained below.

_The Adjusted Estimate._ Essentially, the derivation of value added for 1958-59 follows the same procedure adopted in estimating value added for 1952-57: (1) estimating the gross output and gross value added by the products for which data on output and prices are available; (2) estimating total gross output of factories as a whole; (3) deducting the gross output obtained in step (1) from total gross output to derive the gross output of those products not yet covered in (1); (4) estimating the gross value added of those products not covered in (1); and (5) allowing 5 per cent of gross output for depreciation.

Statistical data on the output of 9 producers' goods and 14 consumers' goods in 1958, and 7 producers' goods and 12 consumers' goods in 1959 are available, or can be roughly estimated. Gross value of output of these identified products is then derived by multiplying the output figures by the price of these products in 1952. Applying the ratio of gross value added to gross output for each of these products in 1952 to the corresponding gross output in 1958-59, we obtain the gross value added by these identified products. The results are presented in Table K-7.

The total gross value of output of producers' goods from factories as a whole in 1958-59 is estimated at 58.71 and 85.90 billion 1952 yuan, and that of the consumers' goods at 30.58 and 41.68 billion 1952 yuan, again by the same methods used in obtaining the estimates for 1952-57. The calculations are shown in Table K-8.
Table K-6
GROSS VALUE OF OUTPUT AND VALUE ADDED BY FACTORIES, 1958-59
(billions of 1952 yuan)

<table>
<thead>
<tr>
<th></th>
<th>Authors' Estimate</th>
<th>Adjusted Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1958</td>
<td>1959</td>
</tr>
<tr>
<td>Gross value of output</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Producers' goods</td>
<td>54.14</td>
<td>71.67</td>
</tr>
<tr>
<td>Identified</td>
<td>35.18</td>
<td>50.27</td>
</tr>
<tr>
<td>Unidentified</td>
<td>12.36</td>
<td>21.34</td>
</tr>
<tr>
<td>Consumers' goods</td>
<td>18.96</td>
<td>21.40</td>
</tr>
<tr>
<td>Identified</td>
<td>14.07</td>
<td>14.96</td>
</tr>
<tr>
<td>Unidentified</td>
<td>4.88</td>
<td>6.44</td>
</tr>
<tr>
<td>Gross value added</td>
<td>21.64</td>
<td>28.64</td>
</tr>
<tr>
<td>Producers' goods</td>
<td>15.40</td>
<td>21.55</td>
</tr>
<tr>
<td>Identified</td>
<td>10.46</td>
<td>9.69</td>
</tr>
<tr>
<td>Unidentified</td>
<td>4.95</td>
<td>11.86</td>
</tr>
<tr>
<td>Consumers' goods</td>
<td>6.24</td>
<td>7.09</td>
</tr>
<tr>
<td>Identified</td>
<td>4.78</td>
<td>5.16</td>
</tr>
<tr>
<td>Unidentified</td>
<td>1.46</td>
<td>1.93</td>
</tr>
<tr>
<td>Depreciation</td>
<td>2.71</td>
<td>3.58</td>
</tr>
<tr>
<td>Producers' goods</td>
<td>1.76</td>
<td>2.51</td>
</tr>
<tr>
<td>Consumers' goods</td>
<td>0.95</td>
<td>1.07</td>
</tr>
<tr>
<td>Net value added</td>
<td>18.93</td>
<td>25.06</td>
</tr>
<tr>
<td>Producers' goods</td>
<td>13.64</td>
<td>19.04</td>
</tr>
<tr>
<td>Consumers' goods</td>
<td>5.29</td>
<td>6.02</td>
</tr>
</tbody>
</table>

Source:
Table K-9 and text of this appendix.
Table K-7

<table>
<thead>
<tr>
<th>Product and unit of measurement</th>
<th>Output(^a)</th>
<th>Gross Value of Output(^b)</th>
<th>Gross Value Added(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producers' goods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pig iron (million tons)</td>
<td>9.53</td>
<td>20.50</td>
<td>1.91</td>
</tr>
<tr>
<td>Steel (million tons)</td>
<td>8.00</td>
<td>13.35</td>
<td>4.80</td>
</tr>
<tr>
<td>Rolled steel (million tons)</td>
<td>6.37</td>
<td>10.64</td>
<td>6.37</td>
</tr>
<tr>
<td>Machinery (million tons)</td>
<td>-</td>
<td>-</td>
<td>7.71</td>
</tr>
<tr>
<td>Cement (million tons)</td>
<td>9.30</td>
<td>12.27</td>
<td>0.79</td>
</tr>
<tr>
<td>Coke (million tons)</td>
<td>16.30</td>
<td>27.20</td>
<td>0.72</td>
</tr>
<tr>
<td>Chemicals (million tons)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammonium sulfate</td>
<td>0.65</td>
<td>1.06</td>
<td>0.26</td>
</tr>
<tr>
<td>Caustic soda</td>
<td>0.27</td>
<td>0.36</td>
<td>0.34</td>
</tr>
<tr>
<td>Pure soda</td>
<td>0.64</td>
<td>0.80</td>
<td>0.22</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>0.74</td>
<td>1.05</td>
<td>0.23</td>
</tr>
<tr>
<td>Paper (million tons)</td>
<td>1.22</td>
<td>1.70</td>
<td>2.23</td>
</tr>
<tr>
<td>Gunny sacks (million pieces)</td>
<td>86.19</td>
<td>-</td>
<td>0.17</td>
</tr>
<tr>
<td>Consumers' goods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cotton yarn (million bales)</td>
<td>6.10</td>
<td>8.25</td>
<td>4.39</td>
</tr>
<tr>
<td>Cotton cloth (million bolts)</td>
<td>147.58</td>
<td>199.59</td>
<td>3.98</td>
</tr>
<tr>
<td>Silk (thousand tons)</td>
<td>7.55</td>
<td>7.55</td>
<td>0.37</td>
</tr>
</tbody>
</table>
Table K-7 (continued)

<table>
<thead>
<tr>
<th>Product and unit of measurement</th>
<th>Output&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Gross Value of Output&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Gross Value Added&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silk piece goods (million meters)</td>
<td>79.44</td>
<td>79.44</td>
<td>0.24</td>
</tr>
<tr>
<td>Woolen textiles (million tons)</td>
<td>-</td>
<td>-</td>
<td>0.57</td>
</tr>
<tr>
<td>Grass cloth (million tons)</td>
<td>-</td>
<td>-</td>
<td>(*)</td>
</tr>
<tr>
<td>Clothing and knitted goods</td>
<td>-</td>
<td>-</td>
<td>0.24</td>
</tr>
<tr>
<td>(million tons)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar (million tons)</td>
<td>0.58</td>
<td>0.73</td>
<td>0.64</td>
</tr>
<tr>
<td>Milled rice (million tons)</td>
<td>2.16</td>
<td>2.26</td>
<td>0.43</td>
</tr>
<tr>
<td>Wheat flour (million tons)</td>
<td>3.95</td>
<td>3.84</td>
<td>1.22</td>
</tr>
<tr>
<td>Edible vegetable oils</td>
<td>-</td>
<td>-</td>
<td>0.46</td>
</tr>
<tr>
<td>(million tons)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cigarettes (million cases)</td>
<td>4.75</td>
<td>5.49</td>
<td>2.33</td>
</tr>
<tr>
<td>Matches (million cases)</td>
<td>10.60</td>
<td>-</td>
<td>0.13</td>
</tr>
<tr>
<td>Rubber footwear (million pairs)</td>
<td>182.36</td>
<td>-</td>
<td>0.73</td>
</tr>
</tbody>
</table>

Notes and Sources:
- Not available.
(*): Less than 0.01 billion yuan.

<sup>a</sup>Output. For the output of pig iron, steel, cement, cotton yarn, cigarettes, and rubber footwear in 1958-59, see Great Ten Years, pp. 84-89, and People’s Daily, January 23, 1960, p. 1. The output of rolled steel and coke in 1957-59 is assumed to have increased in proportion to that of steel over the
Notes and Sources to Table K-7 (continued):

same period. The output of steel in 1957 is given in Appendix F, Table F-8. The output figures for caustic soda, pure soda, and sulfuric acid in 1958 are given in Great Ten Years, p. 85. The corresponding estimates for 1959 are derived on the basis of the 1958 figures and percentage increases in 1959 over 1958 reported at 25, 35, and 42 per cent in NCNA, Peiping, February 1, 1960. The output of ammonium sulfate in 1958-59 is derived on the assumption that it increased from 1957-59 in proportion to that of chemical fertilizers over the same period. For the output of ammonium sulfate in 1957, also see Table F-8, and for the output of chemical fertilizers in 1957-59, see Great Ten Years, p. 86; and People's Daily, January 23, 1960, p. 1. The output of machine-made paper in 1958-59 is given in People's Daily, October 10, 1959, p. 7, and January 23, 1960, p. 1. The output of gunny sacks in 1958 is the planned figure for 1958 given at 110.3 per cent of the 1957 output in TKP, Peiping, February 7, 1958, p. 1. Table F-8 gives the 1957 figure. The output of cotton cloth in 1958-59 is derived on the basis of this 1957 figure and the assumption that it increased from 1957 to 1959 in proportion to that of machine-spun yarn over the same period. The output of silk and silk piece goods are similarly derived from the corresponding figures for 1957 and an index for 1957-59 computed from data on the output of silk cocoons in 1957-59 given in Great Ten Years, p. 110, and Table K-3 above. The outputs of sugar, milled rice, and wheat flour in 1958-59 are also derived by a similar procedure. The outputs of these products in 1957 is shown in Table F-8. The indexes of output of these products are assumed to have changed in proportion to total sugar output given in Great Ten Years, p. 89; and People's Daily, January 23, 1960, p. 1; urban population in
Notes and Sources to Table K-7 (continued):
1958-59; and the output of wheat in 1956-58 given in Appendix C, Table C-1, and Table K-3 above. The urban population in 1959 is given at 100 million in People's Daily, October 25, 1959; the figure for 1958, 95 million, is the average of the figures given in Table 68 for 1959 and 1957. The output of matches in 1958 is the planned figure for that year given at 103.4 per cent of the 1957 figure in TKP, Peiping, February 7, 1958, p. 1. The 1957 output is given in Table F-8.

Gross Value of Output. The gross value of output of all the products except machinery, woolen textiles, grass cloth, clothing and knitted goods, and edible vegetable oils, is obtained by multiplying the output figures of these products by their respective prices in 1952, given in Appendix F, Table F-10. The gross value of machinery output in 1958 is given at 41 times that of 1949 in Chao Er-lu, "The Machinery Industry in the Past Ten Years," People's Daily, September 24, 1959, p. 9. The output in 1949 is 188 million yuan as given in 1955 Statistical Abstract, p. 40; thus the 1958 figure is calculated at 7,708 million yuan. The gross outputs of woolen textiles, grass cloth, clothing and knitted goods, and edible vegetable oils in 1958-59 assumed to have increased from 1957 to 1959 in proportion to the output of wool and hemp crops in 1956-58 given in Appendix C, Table C-5, and the text under Hemp Crops, and Table K-3 above; the output of cotton yarn in 1957-59 given above; and the total output of edible vegetable oils in 1957-59 given in Great Ten Years, p. 89; and People's Daily, January 23, 1960, p. 1.

Gross Value Added. These figures are derived by applying the ratio of gross value added to gross output for each of the products given in Appendix F, Table F-11, to the gross value of output in 1958-59 already obtained.
Table K-8
GROSS VALUE OF OUTPUT OF FACTORIES, 1958-59
(billions of 1952 yuan)

<table>
<thead>
<tr>
<th></th>
<th>1958</th>
<th>1959</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross output of producers' goods&lt;sup&gt;a&lt;/sup&gt;</td>
<td>65.06</td>
<td>93.23</td>
</tr>
<tr>
<td>Deduct:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mineral products&lt;sup&gt;b&lt;/sup&gt;</td>
<td>5.82</td>
<td>7.91</td>
</tr>
<tr>
<td>Electric power&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1.65</td>
<td>2.49</td>
</tr>
<tr>
<td>Lumber&lt;sup&gt;c&lt;/sup&gt;</td>
<td>0.79</td>
<td>1.03</td>
</tr>
<tr>
<td>Add: Pig iron</td>
<td>1.91</td>
<td>4.10</td>
</tr>
<tr>
<td>Equals: Factory output of producers' goods</td>
<td>58.71</td>
<td>85.90</td>
</tr>
<tr>
<td>Gross output of consumers' goods&lt;sup&gt;a&lt;/sup&gt;</td>
<td>31.90</td>
<td>42.75</td>
</tr>
<tr>
<td>Deduct:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output of salt&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1.41</td>
<td>1.50</td>
</tr>
<tr>
<td>Water and gas supply&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.57</td>
<td>0.60</td>
</tr>
<tr>
<td>Part of fishery products&lt;sup&gt;d&lt;/sup&gt;</td>
<td>1.20</td>
<td>1.49</td>
</tr>
<tr>
<td>Add: Part of cotton yarn</td>
<td>1.86</td>
<td>2.52</td>
</tr>
<tr>
<td>Equals: Consumers' goods output of factories</td>
<td>30.58</td>
<td>41.68</td>
</tr>
<tr>
<td>Total gross value of output of factories</td>
<td>89.29</td>
<td>127.58</td>
</tr>
</tbody>
</table>

**Notes and Sources:**

<sup>a</sup> *Industrial output: gross output of producers' goods and consumers' goods.* Total output of producers' goods and consumers' goods in 1958 is derived at 77.03 and 54.08 billion 1952 yuan by deflating the corresponding estimates in 1957 prices (67.0 and 50.0 billion 1957 yuan) by price indexes for 1957 with 1952 as 100 (87.0 and 92.4 per cent), computed from gross output of producers' and consumers' goods in 1957 in constant 1952 and 1957.
Notes and Sources to Table K-8 (continued):

prices. For data used in this calculation, see Great Ten Years, p. 76. The gross output for 1959 is derived at 110.38 and 72.47 billion 1952 yuan by multiplying the 1958 figures by the indexes for 1959 with 1958 as 100, given at 143.3 and 134.0 per cent for the producers' and consumers' goods in People's Daily, January 23, 1960, p. 1. On the assumption that the output of factories increased in 1957-59 at the same rate as total output over the same period, we derive the gross output of producers' goods in 1958-59 at 65.06 and 93.23 billion 1952 yuan, and gross output of consumers' goods, 31.90 and 42.75 billion 1952 yuan. The gross output of producers' goods and consumers' goods produced by factories is given in Appendix F, Table F-16.

b Gross value of mineral products, electric power, salt, water and gas supply. Tables K-10 and K-11.

c Gross value of lumber. Total gross output of lumber has been estimated at 1.68 and 1.98 billion yuan for 1958-59 earlier in this appendix. The proportion of output produced by the modern sector is roughly estimated at 47 and 52 per cent of the total gross output for 1958-59 by linear extrapolation from the figures for 1952-57. These figures are given in Appendix F under Gross Value Output of All Factories. The 1952 price of timber, 1.48 yuan per cubic meter, is given in Appendix D.

d Gross value of part of fishery products. This item represents the gross output of natural marine products, estimated at 78 per cent of total marine products given in Table K-3 and under Fishery Products in Appendix D. For the derivation of the percentage of natural fishery products in total marine products, see Appendix F, in the section on Gross Value of Output of All Factories.
Gross outputs of those producers' goods in 1958-59 not covered in Table K-7 are 32.96 and 56.32 billion yuan, obtained by deducting the gross output of the identified products given in Table K-7 from the corresponding totals given in Table K-8. Similarly derived, the gross output of consumers' goods not covered in Table K-7 are 14.84 and 23.12 billion 1952 yuan for 1958 and 1959.

For lack of a better alternative, we assume that the percentages of gross value added by the unidentified producers' and consumers' goods in the gross value of output of these goods in 1958 are the same as for comparable products in 1957. The latter figures are computed at 40 per cent for producers' goods and 30 per cent for consumers' goods.⁴ Applying these percentages to the gross output of unidentified producers' and consumers' goods in 1958, we obtain the gross value added by them at 14.84 and 4.45 billion yuan. By a similar procedure, gross value added by unidentified producers' goods in 1959 is derived at 23.09 billion yuan, and consumers' goods at 6.94 billion yuan.⁵

Total gross value added by producers' and consumers' goods thus amounts to 24.99 and 13.18 billion yuan in 1958, and 36.55 and 23.09 billion yuan in 1959. Allowing an arbitrary 5 per cent of gross output for depreciation, we obtain net value added by producers' and consumers' goods in 1958 at 22.06 and 8.29 billion yuan, totalling 30.35 billion yuan, and the corresponding estimates for 1959 at 32.25 and 11.31 billion yuan, totalling 43.56 billion yuan.

The Authors' Estimates. The methods used in deriving the authors' estimate of net value added by factories in 1958-59 are essentially the same as those used in deriving the adjusted estimates. First, the gross output and gross value added by identified products are estimated
separately for producers' goods and consumers' goods, as shown in Table K-9. Except for four producers' goods (pig iron, steel, rolled steel, and coke) and three consumers' goods (cotton yarn, cotton cloth, and clothing and knitted goods) for which adjustments have been made, gross output and gross value added by identified products are taken from Table K-7. The gross output of producers' goods and consumers' goods are explained in turn.

According to the Communist claims, output of modern steel in 1958 reached 8 million tons. However, a considerable portion of this total must have been produced by the small converters during the period of the Great Leap Forward in 1958-59, and is excluded from our estimate for modern factories by the following procedure. On the basis of the gross output of machinery and steel in 1952-57, given in Table 39, a linear regression of machinery output on steel output is obtained. With a gross output of machinery in 1958 equal to 7.71 billion yuan in 1958 and on the assumption that this linear regression relationship holds also for 1958, a rough estimate of the gross output of steel can be obtained at 3.80 billion yuan for 1958.

The Communist figure of steel output for 1959 must also be adjusted to exclude the output of the small converters. Unfortunately, data on machinery for 1959 are not available and an even more arbitrary method of revision must be adopted. This revision is made on the assumption that the ratio of the authors' estimate to the adjusted estimate of the increase in steel output from 1958 to 1959 is the same as for 1957 to 1958, that is, 37 per cent. Since the adjusted gross outputs of steel in both 1958 and 1959 are known, the authors' estimate of gross output
Table K-9
GROSS VALUE OF OUTPUT AND GROSS VALUE ADDED BY IDENTIFIED MANUFACTURED PRODUCTS, 1958-59
(billions of 1952 yuan)

<table>
<thead>
<tr>
<th></th>
<th>Authors' Estimates</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Gross Value of Output</td>
<td>Gross Value Added</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1958</td>
<td>1959</td>
<td>1958</td>
</tr>
<tr>
<td>Producers' goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pig iron</td>
<td>1.45</td>
<td>2.43</td>
<td>0.58</td>
<td>0.97</td>
</tr>
<tr>
<td>Steel</td>
<td>3.80</td>
<td>5.36</td>
<td>2.28</td>
<td>3.21</td>
</tr>
<tr>
<td>Rolled steel</td>
<td>5.04</td>
<td>7.11</td>
<td>1.87</td>
<td>2.63</td>
</tr>
<tr>
<td>Machinery</td>
<td>7.71</td>
<td>-</td>
<td>3.54</td>
<td>-</td>
</tr>
<tr>
<td>Cement</td>
<td>0.79</td>
<td>1.04</td>
<td>0.29</td>
<td>0.38</td>
</tr>
<tr>
<td>Coke</td>
<td>0.57</td>
<td>0.80</td>
<td>0.30</td>
<td>0.42</td>
</tr>
<tr>
<td>Chemicals</td>
<td>1.05</td>
<td>1.48</td>
<td>0.39</td>
<td>0.55</td>
</tr>
<tr>
<td>Paper</td>
<td>2.23</td>
<td>3.11</td>
<td>1.09</td>
<td>1.52</td>
</tr>
<tr>
<td>Gunny sacks</td>
<td>0.17</td>
<td>-</td>
<td>0.12</td>
<td>-</td>
</tr>
<tr>
<td>Consumers' goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cotton yarn</td>
<td>3.55</td>
<td>4.11</td>
<td>1.81</td>
<td>2.10</td>
</tr>
<tr>
<td>Cotton cloth</td>
<td>3.20</td>
<td>3.70</td>
<td>0.61</td>
<td>0.70</td>
</tr>
<tr>
<td>Silk</td>
<td>0.37</td>
<td>0.37</td>
<td>0.11</td>
<td>0.11</td>
</tr>
<tr>
<td>Silk piece goods</td>
<td>0.24</td>
<td>0.24</td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td>Woolen textiles</td>
<td>0.57</td>
<td>0.63</td>
<td>0.27</td>
<td>0.30</td>
</tr>
<tr>
<td>Grass cloth</td>
<td>(*)</td>
<td>(*)</td>
<td>(*)</td>
<td>(*)</td>
</tr>
<tr>
<td>Clothing and knitted goods</td>
<td>0.21</td>
<td>0.24</td>
<td>0.10</td>
<td>0.11</td>
</tr>
<tr>
<td>Sugar</td>
<td>0.64</td>
<td>0.80</td>
<td>0.31</td>
<td>0.39</td>
</tr>
<tr>
<td>Milled rice</td>
<td>0.43</td>
<td>0.45</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Wheat flour</td>
<td>1.22</td>
<td>1.19</td>
<td>0.13</td>
<td>0.13</td>
</tr>
<tr>
<td>Edible vegetable oils</td>
<td>0.46</td>
<td>0.53</td>
<td>0.08</td>
<td>0.10</td>
</tr>
<tr>
<td>Cigarettes</td>
<td>2.33</td>
<td>2.69</td>
<td>0.98</td>
<td>1.13</td>
</tr>
<tr>
<td>Matches</td>
<td>0.13</td>
<td>-</td>
<td>0.05</td>
<td>-</td>
</tr>
<tr>
<td>Rubber footwear</td>
<td>0.73</td>
<td>-</td>
<td>0.24</td>
<td>-</td>
</tr>
</tbody>
</table>

Notes:
- Not available.

(*) Less than 0.005 billion yuan.
of steel in 1959 can be estimated at 5.36 billion yuan. The gross output of pig iron, rolled steel, and coke produced by modern factories in 1958-59 are then obtained on the assumption that their outputs increased from 1957 in proportion to that of steel.

The authors' estimate of gross output of cotton yarn, cotton cloth, and clothing and knitted goods in 1958-59 are obtained by summing net exports and domestic consumption of these products. Exports in 1957-59 are roughly estimated at 0.72, 0.96, and 1.93 billion yuan on the basis of fragmentary data on clothing exports to Soviet Russia and Western countries. By deducting exports of 0.72 billion yuan from total output of 6.57 billion yuan given in Table 39, domestic consumption in 1957 is equal to 5.85 billion yuan. For 1958-59, domestic consumption is derived at 5.99 and 6.13 billion yuan on the assumption that domestic consumption in 1958-59 increased from 1957 at the same rate as total population over the same period as discussed earlier in this appendix. The sum of exports and domestic consumption in 1958-59 is equal to total gross output, imports (if any) being negligible. We assume that the percentage composition of the three products in the total is the same as that derived from the adjusted estimate given in Table K-7. The gross output of each of these three products in 1958-59 can then be easily calculated.

To derive gross value added by the seven products (pig iron, steel, rolled steel, coke, cotton yarn, cotton cloth, and clothing and knitted products) given in Table K-9, the percentages of gross value added in gross output given for 1952 in Appendix F, Table F-11, are used.

The gross output of unidentified producers' goods in 1958-59 is assumed to have increased from 1957 in proportion to identified products.
over the same period. The results are 12.36 and 28.93 billion yuan for 1958-59.\textsuperscript{14} By a similar procedure, the gross output of unidentified consumers' goods is derived at 4.88 and 6.44 billion yuan for 1958 and 1959.\textsuperscript{15} By applying the percentages of gross value added in gross output of unidentified producers' and consumers' goods used for the corresponding adjusted estimates given earlier, gross value added by the unidentified producers' goods in 1958-59 are computed at 4.95 and 11.86 billion yuan, and those of unidentified consumers' goods, 1.46 and 1.93 billion yuan.

Total gross output of producers' goods in 1958 and 1959 thus amounts to 35.18 and 50.27 billion yuan, and that of consumers' goods, 18.96 and 21.40 billion yuan. The gross values added for these two years are 15.40 and 21.55 billion yuan for producers' goods, and 6.24 and 7.09 billion yuan for consumers' goods. Again, allowing 5 per cent of gross output for depreciation, we obtain estimates of net value added by producers' goods in 1958-59 at 13.64 and 19.04 billion yuan, and by consumers' goods at 5.29 and 6.02 billion yuan.

HANDICRAFTS

Net value added by handicrafts in 1958-59 is derived on the assumption that it increased from 1957 in proportion to the gross output of agriculture and mining over the same period, the two latter industries being suppliers of raw materials to handicrafts. On the same assumption, but using the adjusted estimates of gross output of agriculture and mining, we also derive the adjusted estimate of net value added by handicrafts at 7.76 and 8.69 billion yuan for 1958 and 1959. For the authors' estimates of gross output of agriculture and mining in 1957, see Tables 36 and 47, and Tables K-2 and K-10 in this appendix. For the adjusted estimates,
see Appendix E, Table E-3, Appendix H, Table H-2, and this appendix, Tables K-2 and K-10.

MINING

Table K-10 summarizes the estimates of gross output and net value added by mining in 1958-59. For expository convenience, the adjusted estimates are first explained. Gross output of all the products, except miscellaneous products, is derived by multiplying output of each of these products by their 1952 prices given in Appendix H, Table H-1. The total output of coal in 1958-59 is given at 270 and 347 million tons; that of crude oil, 2.264 and 3.700 million tons; and that of salt, 10.40 and 11.04 million tons in *Great Ten Years*, pp. 84-89; and *People's Daily*, January 23, 1960, p. 1. The proportions of native and other output in total coal and salt output in 1957 given in Table H-2 are used to split total outputs of coal and salt in 1958-59 into these two categories. The outputs of iron ore and manganese ore in 1958-59 are assumed to have increased at the same rate as the output of pig iron over the same period; and the output of limestone in 1958-59, at the same rate as that of cement over the same period. For the output of pig iron and cement in 1957-59, see Appendix F, Table F-8, and Table K-7 of this appendix. Gross output of the miscellaneous products, in turn, is assumed to have increased in 1957-59 in proportion to the total gross output of all the other mineral products, except salt, over the same period. The reason for excluding the gross output of salt in this calculation is that the output of miscellaneous products is not likely to fluctuate as erratically as the output of salt, which depends heavily on weather conditions.

Net value added by these seven product groups is derived by applying the percentage of net value added in gross output of each of these product
Table K-10
GROSS VALUE OF OUTPUT AND NET VALUE ADDED BY
MINING, 1958-59
(billions of 1952 yuan)

<table>
<thead>
<tr>
<th></th>
<th>Adjusted Estimate</th>
<th>Authors' Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1958</td>
<td>1959</td>
</tr>
<tr>
<td>Gross value of output</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>9.40</td>
<td>12.10</td>
</tr>
<tr>
<td>Native</td>
<td>4.96</td>
<td>6.38</td>
</tr>
<tr>
<td>Other</td>
<td>1.76</td>
<td>2.26</td>
</tr>
<tr>
<td>Crude oil</td>
<td>3.20</td>
<td>4.12</td>
</tr>
<tr>
<td>Iron ore</td>
<td>0.36</td>
<td>0.59</td>
</tr>
<tr>
<td>Manganese ore</td>
<td>0.89</td>
<td>1.34</td>
</tr>
<tr>
<td>Limestone</td>
<td>0.08</td>
<td>0.12</td>
</tr>
<tr>
<td>Salt</td>
<td>0.30</td>
<td>0.40</td>
</tr>
<tr>
<td>Native</td>
<td>1.81</td>
<td>1.93</td>
</tr>
<tr>
<td>Other</td>
<td>0.41</td>
<td>0.43</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1.41</td>
<td>1.50</td>
</tr>
<tr>
<td>Net value added</td>
<td>0.99</td>
<td>1.34</td>
</tr>
<tr>
<td>Coal</td>
<td>5.55</td>
<td>7.16</td>
</tr>
<tr>
<td>Native</td>
<td>2.37</td>
<td>3.05</td>
</tr>
<tr>
<td>Other</td>
<td>0.69</td>
<td>1.79</td>
</tr>
<tr>
<td>Crude oil</td>
<td>1.68</td>
<td>1.26</td>
</tr>
<tr>
<td>Iron ore</td>
<td>0.32</td>
<td>0.48</td>
</tr>
<tr>
<td>Manganese ore</td>
<td>0.69</td>
<td>1.04</td>
</tr>
<tr>
<td>Limestone</td>
<td>0.07</td>
<td>1.10</td>
</tr>
<tr>
<td>Salt</td>
<td>0.27</td>
<td>0.36</td>
</tr>
<tr>
<td>Native</td>
<td>1.13</td>
<td>1.19</td>
</tr>
<tr>
<td>Other</td>
<td>0.25</td>
<td>0.26</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0.88</td>
<td>0.93</td>
</tr>
<tr>
<td>Note:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Not available.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
groups for 1957 to the gross output in 1958-59. Allowances for depreciation in 1958-59 are assumed to account for the same proportion of total gross output as in 1952-57, that is, 5 per cent.

With the exception of coal and miscellaneous mineral products, the authors' estimates of gross output of all other products are the same as the adjusted figures. For coal, net value added in 1958 is first estimated at 1.30 and for 1959 at 1.65 billion yuan on the basis of the total of the net value added by the three most important coal consuming industries (factories, utilities, and modern transportation) in 1958-59, given in this appendix, and a linear regression of net value added by these three industries on the net value added by coal mining in 1952-57, obtained from data given in Tables 37, 47, and 48. The gross output of coal and miscellaneous mineral products and the net value added by the latter are then derived by multiplying the corresponding adjusted estimates for 1958-59 by a factor equal to the ratio of the adjusted net value added by coal mining to the corresponding adjusted estimate for 1958-59.

**UTILITIES**

Estimates of gross output and value added by electric power, water supply, and gas supply are derived separately. Estimates for electric power in 1958 and 1959 are obtained by extrapolation from the estimates for 1957 given in Appendix H, Table H-5, on the basis of an index of electric power output in 1957-59 given in Great Ten Years, p. 84; and People's Daily, January 23, 1960, p. 1. The estimates for water supply are derived similarly. The output index of water supply for 1957-58 is computed from output data given in Great Ten Years, p. 69, and the index for 1958-59 is assumed to be the same as for urban population in 1958-59,
given in notes to Table K-7. For gas supply, it is assumed that the figures are the same as in 1957. The results are shown in Table K-11.

CONSTRUCTION

Net value added by construction in 1958 is derived by extrapolating from the estimate for 1957 given at 4.62 billion in Table 47, on the basis of an index of the number of workers in construction in 1957-58. The number of workers in 1957 has already been estimated at 2.40 million in Table 59. The figure for 1958 is estimated at 3.25 million by summing the number of regular workers in August 1958 given at 3 million in "The Big Leap Forward in Basic Construction Work," TOYC, No. 9, 1958, p. 10, and the number of temporary workers which is assumed to be the same as in 1955, given in Table 59.

Net value added by construction in 1959 is derived on the assumption that it increased from 1958 in proportion to the volume of basic construction work included in the state investment plan. Basic construction work increased from 21.44 billion yuan in 1958 to 26.70 billion yuan in 1959, as reported in Great Ten Years, p. 47; and People's Daily, January 23, 1960, p. 1.

MODERN TRANSPORTATION AND COMMUNICATIONS

For convenience, the adjusted estimate of value added by this industry in 1958-59 is first derived as follows. Gross receipts and value added in 1958-59 are derived by extrapolating from the estimates for 1957 on the basis of appropriate indexes for 1958-59 with 1957 as 100. Separate indexes of the 1958 volume of freight by railroads, trucks, and ships, the volume of passenger traffic, and gross receipts from communications and postal service in 1952 prices, with 1957 as 100, can be derived from data given in Great Ten Years, pp. 138-139. The index for railroad freight
Table K-11
GROSS VALUE OF OUTPUT AND NET VALUE ADDED BY UTILITIES, 1958-59
(billions of 1952 yuan)

<table>
<thead>
<tr>
<th></th>
<th>1958&lt;sup&gt;a&lt;/sup&gt;</th>
<th>1959&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross value of output</td>
<td>2.22</td>
<td>3.09</td>
</tr>
<tr>
<td>Electric power</td>
<td>1.65</td>
<td>2.49</td>
</tr>
<tr>
<td>Water supply</td>
<td>0.50</td>
<td>0.53</td>
</tr>
<tr>
<td>Gas supply</td>
<td>0.07</td>
<td>0.07</td>
</tr>
<tr>
<td>Gross value added</td>
<td>1.30</td>
<td>1.75</td>
</tr>
<tr>
<td>Electric power</td>
<td>0.86</td>
<td>1.29</td>
</tr>
<tr>
<td>Water supply</td>
<td>0.40</td>
<td>0.42</td>
</tr>
<tr>
<td>Gas supply</td>
<td>0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>Depreciation</td>
<td>0.32</td>
<td>0.44</td>
</tr>
<tr>
<td>Electric power</td>
<td>0.22</td>
<td>0.33</td>
</tr>
<tr>
<td>Water supply</td>
<td>0.10</td>
<td>0.11</td>
</tr>
<tr>
<td>Gas supply</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Net value added</td>
<td>0.97</td>
<td>1.32</td>
</tr>
<tr>
<td>Electric power</td>
<td>0.64</td>
<td>0.97</td>
</tr>
<tr>
<td>Water supply</td>
<td>0.30</td>
<td>0.32</td>
</tr>
<tr>
<td>Gas supply</td>
<td>0.03</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Note:
<sup>a</sup>No adjustment has been made in these figures. Hence, they represent both the adjusted and the authors' figures.
in 1959 with 1958 as 100 is derived from data on the tonnage of freight carried by the railroads in 1958-59. *Ibid.*, p. 129; and *People's Daily*, January 23, 1960, p. 1. The index for the total volume of freight carried by trucks and ships and that for the total volume of passenger traffic in 1959 with 1958 as 100 are assumed to be the same as the corresponding indexes for 1958, with 1957 as 100. For communications and postal service, it is assumed that gross receipts in 1958-59 increased at the same rate as the average rate for 1952-57 derived from data given in *Great Ten Years*, p. 138. The results are shown in Table K-12.

As noted in Chapter III, the output data for modern factories are probably exaggerated. Since the workers and managers in the modern transportation and communications industry are working under the same incentive system and under the same tremendous pressure of the Great Leap Forward to fulfill and overfulfill the output quota as those in modern factories, it is likely that the statistics of the modern transportation and communications industry are also exaggerated. To allow for this exaggeration, we assume that the degree of exaggeration is the same in the statistics for transportation and factories. The authors' estimates of net value added in modern transportation and communications in 1958-59 are thus derived at 4.13 and 5.17 billion yuan by multiplying the corresponding adjusted estimates by the ratios of the authors' estimates to the adjusted estimates of net value added by factories in 1958-59 given in Table K-6.

**OLD-FASHIONED TRANSPORTATION**

The derivation of net value added by old-fashioned transportation follows the same procedure as that used to derive the estimate for 1952-57. The underlying assumption is that the total volume of transportation of
Table K-12
GROSS RECEIPTS AND NET VALUE ADDED, MODERN TRANSPORTATION, COMMUNICATIONS AND POSTAL SERVICE, 1958-59
(billions of 1952 yuan)

<table>
<thead>
<tr>
<th></th>
<th>1958</th>
<th>1959</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Receipts</td>
<td>12.36</td>
<td>16.83</td>
</tr>
<tr>
<td>Freight&lt;sup&gt;a&lt;/sup&gt;</td>
<td>10.47</td>
<td>14.66</td>
</tr>
<tr>
<td>Passenger&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.31</td>
<td>1.51</td>
</tr>
<tr>
<td>Communications and postal service</td>
<td>0.58</td>
<td>0.66</td>
</tr>
<tr>
<td>Gross value added</td>
<td>7.19</td>
<td>9.78</td>
</tr>
<tr>
<td>Freight</td>
<td>6.68</td>
<td>8.51</td>
</tr>
<tr>
<td>Passenger</td>
<td>0.67</td>
<td>0.77</td>
</tr>
<tr>
<td>Communications and postal service</td>
<td>0.44</td>
<td>0.50</td>
</tr>
<tr>
<td>Depreciation</td>
<td>0.52</td>
<td>0.70</td>
</tr>
<tr>
<td>Net value added</td>
<td>6.66</td>
<td>9.07</td>
</tr>
</tbody>
</table>

Note:
<sup>a</sup>Modern transportation includes truck, rail, and ship; excludes air.
both the modern and traditional sectors varies proportionately with the output of agriculture, factories, handicrafts, and mining, the major industries to which the transportation industry provides its services.\textsuperscript{16} Net value added by these four industries in 1957-59 and total net value added by the entire transportation industry in 1957 being known (see Table 8 and Table K-1), total net value added by the entire transportation industry in 1958-59 can be calculated at 7.00 and 8.00 billion yuan. Deducting the net value added by the modern sector, 4.13 and 5.17 billion yuan, given above, we obtain net value added by the traditional sector in 1958-59 at 2.87 and 2.83 billion yuan. By a similar procedure and using the adjusted estimate of net value added by the four industries given in this appendix and in Table 68, the adjusted estimates of net value added by old-fashioned transportation in 1958-59 are derived at 3.72 and 3.56 billion yuan.

\textbf{TRADE}

The derivation of net value added by trade in 1958 and 1959 (12.38 and 13.56 billion yuan) is based on the linear regression of the sum total of net value added by agriculture, factories, handicrafts, and mining on the net value added by trade for 1952-57 given in Table 49, and the net value added by the four industries in 1958-59, given earlier in this appendix. The adjusted estimates of net value added by trade in 1958-59 are derived similarly at 19.31 and 23.47 billion yuan.

\textbf{GOVERNMENT ADMINISTRATION}

Net income originating in government administration in 1958-59, including social, educational, and health services supported by the government but excluding military subsistence, is 3.85 and 5.09 billion
yuan. These figures are estimated by extrapolating from the corresponding estimate for 1957 given at 4.01 billion yuan in Appendix H (under Government, 1952-57) on an index of total state expenditures on administration and cultural and social services for 1958-59 with 1957 as 100 (computed from data given in Great Ten Years, p. 21, and Li Hsien-nien, "Report on the Implementation of the State Budget for 1959 and the Draft State Budget for 1960," People's Daily, April 1, 1960, p. 2). Military subsistence in 1958-59 is assumed to be the same as in 1957 given at 1.02 billion yuan in Appendix H. Total net income originating in the government sector, therefore, amounts to 4.87 and 6.11 billion yuan for 1958 and 1959.

FINANCE

Net value added by finance in 1957-59 is assumed to have increased in proportion to net value added by agriculture, factories, mining, trade, and construction as a whole over the same period. Net value added by finance in 1957 and net value added by these five industries in 1957-59 being known (Table 8, and earlier sections of this appendix), net value added by finance in 1958 and 1959 can be derived at 2.00 and 2.29 billion yuan. The corresponding adjusted estimates of net value added by finance in 1958-59 are similarly derived at 2.91 and 3.58 billion yuan.

PERSONAL SERVICES

Income originating in personal services in 1958-59 is assumed to be the same as in 1957 given at 0.51 billion yuan in the discussion of personal services in Appendix H.

RESIDENTIAL RENT

Residential rent in 1958-59 is assumed to have increased from 1957 in proportion to total population over the same period. For data on
total population in 1957-59, see Table 32 and the first section of this appendix.

**WORK BRIGADES**

Net value added by work brigades in 1958 and 1959 is derived at 2.50 and 3.27 billion yuan by summing up the estimates for their value added in railroad construction, highway construction, water conservation, and militia services.

The mileage of newly constructed railroads in 1958 is reported at 1,332 kilometers and that of reconstructed railroads, 1,044 kilometers in *Great Ten Years*, p. 60. Multiplying these figures by the amount of earth work done per kilometer of construction, given at 63 and 50 thousand cubic meters in Appendix H, Table H-15, and summing, we obtain the total volume of earth work done in railroad construction at 136 million cubic meters. Assuming that 80 per cent of this was done by work brigades and that the value added per cubic meter of work done amounts to 0.50 yuan, we derive the total value added by work brigades in railroad construction in 1958 at 54 million yuan. Net value added in 1959 is derived at 70 million yuan on the assumption that it increased from 1958 in proportion to the mileage of railroad track laid over the same period, reported at 29 per cent above the 1958 figure in *NCNA*, Peiping, January 29, 1960.

Total mileage of highway construction in 1958 is reported at 150,000 kilometers in *People's Daily*, April 14, 1959. As mentioned in Appendix H, earth work done per kilometer was 2,150 cubic meters. Assuming that 80 per cent of the total earth work was done by work brigades, and that the value added per cubic meter was 0.50 yuan, we derive total value added by the work brigades in highway construction in 1958 at 129 million yuan.
The estimate for 1959 is derived at 166 million yuan by assuming that it increased in proportion to railroad construction over the same period.

According to People's Daily, April 15, 1959, the volume of work done in water conservation in the period October 1957 to September 1958, totalled 5.8 billion cubic meters. The volume of work done in the first three quarters of 1958 is estimated at three-fourths of the total, that is, 4.35 billion cubic meters. The estimate for the last quarter is assumed to be one-half of the amount done in other quarters since the entire nation was preoccupied with backyard blast furnaces which must have drawn away considerable amounts of labor from water conservation. Total earth work done is thus calculated at 5.08 billion cubic meters, of which 80 per cent, or 4.06 billion cubic meters, is assumed to have been done by work brigades. At 0.50 yuan per cubic meter, total net value added is derived at 2.030 million 1952 yuan.

The total earth and stone work done in water conservation and irrigation in 1959 is assumed to be the same as for the period October 1958, to September 1959, reported at 13 billion cubic meters. Ibid., January 23, 1960. The volume of work done in water conservation alone is arbitrarily assumed to be one-half of the total, that is, 6.5 billion cubic meters.

Assuming, further, that 80 per cent of this total was done by work brigades and that net value added per cubic meter was 0.50 yuan per cubic meter (see Appendix H, the notes to Table H-17), we derive the net value added by work brigades in water conservation projects in 1959 at 2,600 million 1952 yuan.

Since the establishment of the communes in 1958, militia services presumably increased substantially. For lack of information, we arbitrarily assume that the imputed value of militia services in 1958 and 1959 is two and three times that of the 1957 figure of 144 million 1952 yuan.
DEPRECIATION

Depreciation in agriculture and factories have already been estimated in Tables K-2 and K-6. Depreciation in other sectors is roughly estimated by the same methods as those used in deriving depreciation in 1952-57. ¹⁹
FOOTNOTES TO APPENDIX K

1. The derivation of the 1952-57 figure is described in Appendix E.

2. The assumption of 100 per cent utilization does not mean that there is no increase in stock.

3. For the computation of this ratio, see Miscellaneous Products in Appendix E. For the gross value of the four major categories of agricultural products in 1958-59, see Table K-2.

4. Data used in calculating the percentages for 1957 are given in Tables 37 and 39.

5. The percentages of gross value added in gross output are computed at 41 and 30 per cent for the unidentified producers' and consumers' goods. For data used in this calculation, see Tables K-7 and K-8.

6. HFPYX, No. 17, 1959, p. 22.

7. By 1956, the rate of utilization of modern steel producing equipment was already close to 90 per cent of capacity. (See CHCC, Peiping, July 1957, p. 6.) This means that any further expansion in the output of the modern mills must come primarily from increase in capacity. However, productive capacity increased only by 0.53 million tons in 1957 over 1956, and the only important plants completed in 1958 were the No. 4 and No. 5 converters in Anshan, which could hardly account for the increase of 2.65 million tons of modern steel in 1958 over 1957. The increase of capacity in 1957 is derived by deducting the increase in 1953-56 (2.29 million tons given in SSB, Industry Study, p. 16) from the total increase in 1953-57 (2.82 million tons given in PPYP Communiqué, p. 49). For the list of major construction projects completed or partially completed, see 1958 Communiqué, p. 53. In another reference, the total productive capacity at the end of
1958 is given at 6.48 million tons, and the total output at 8.0 million tons. (SSE, "Rapid Development in China's Industrial Construction," T'ung-chi yen-chiu (Statistical Research), Peiping, No. 9, September 1958, pp. 10-12). For the two figures to be consistent, there must be an increase in capacity of more than 1.5 million tons in 1958 and for the above reasons this does not seem plausible.

8. For a discussion of the reasons why the output of steel in 1958 is derived indirectly, see Chapter III under A Conjectural Estimate of Domestic Products, 1958-59.

9. The gross value of output in 1957 has been estimated at 3.21 billion yuan and the 1958 authors' estimate and adjusted estimate of gross value of output, 3.80 and 4.80 billion yuan. (See Tables 39, K-7 and K-9.) The authors' estimate of the increase in gross value of output from 1957 to 1958 is therefore equal to 3.80 - 3.21 = 0.59, and the estimated adjusted increase, 4.80 - 3.21 = 1.59 billion yuan. The ratio of the authors' estimated increase to the adjusted increase is thus calculated at 0.59/1.59 = 37 per cent.

10. The adjusted increase from 1958 to 1959 is equal to 8.01 - 3.80 = 4.21 billion yuan (Table K-7). Multiplying 4.21 by 37 per cent, we obtain our estimated increase at 1.56 billion yuan. This amount is then added to our 1958 estimated total output of 3.80 billion yuan to obtain gross output of 5.36 billion yuan for 1959.

11. For the gross output of pig iron, rolled steel, and coke in 1957, see Table 39, and for the adjusted gross output in 1958-59, see Table K-7.

12. See the section A Conjectural Estimate of Domestic Product, 1958-59, in Chapter III.
13. 1957 exports -- the sum of exports of cotton cloth, knitted goods, semifinished and finished textile products, and one-half of the export of miscellaneous clothing products given in Table 91.


1959 exports -- the index of exports of cotton cloth and related products to Soviet Russia in 1958-59, given in *China Trade and Economic Newsletter*, October 1960, p. 7. The original data on exports are given in rubles and U.S. dollars; in our computation, they have been converted to yuan at the official exchange rates given in *CHCC*, No. 12, 1957, p. 29.


16. This assumption presupposes that transportation capacity itself is not a limiting factor. While there might well be temporary and regional bottlenecks, such as those that occurred in the latter part of 1958, over longer periods this assumption appears reasonable. In the modern sector, the most important carrier is the railroad. Considerable increase in the rolling stock and improvements in management have been reported (see, for example, *People's Daily*, January 25, 1960, p. 1; and

Railroad construction since 1949 apparently has been determined more by strategic than by economic considerations. Consequently, overloading of the newly constructed railroads, particularly in the northwestern part, does not appear likely. In the traditional sector, human labor is primarily the means of transport, and the supply of unskilled labor used in transport is generally rather elastic.

17. Derivation of the value added per cubic meter of earth work done is explained under Water Conservation Projects in Appendix H.

18. See the discussion on value of militia services under Water Conservation Projects in Appendix H.

19. Depreciation is also discussed under most of the sections in Appendix H and immediately preceding the discussion on mining in Chapter IV.
INTRODUCTION TO REFERENCE MATERIALS

The arrangement of materials adopted here is designed to serve three groups of readers: (1) those who do not read Chinese; (2) those who are particularly interested in either the pre-1949 or post-1948 periods; (3) those who are interested in Communist Chinese official statistics or statements on economic policy. The references are therefore arranged by language, period, and nature of the source.

Section I(B)(4), "Official reports and statements," lists articles by officials of the Communist regime who are of cabinet rank or higher. In this way we have attempted to distinguish statements made by major policy makers. Section I(B)(3), "State Statistical Bureau," is for the convenience of those who are particularly interested in the nature and reliability of Communist statistics.

The following Table of Organization shows the arrangement of references.

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<td>Chang, C. C., <em>An Estimate of China's Farms and Crops</em>, Nanking,</td>
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