


BLUEPRINT FOR AN EXPANDED AND INTEGRATED SYSTEM OF NATIONAL ACCOUNTS

1. PRODUCTION
   Gross Domestic Product Equals
   Gross Domestic Factor Outlay

2. DOMESTIC RECEIPTS AND EXPENDITURES
   Domestic Receipts Equal
   Domestic Expenditure

3. FOREIGN TRANSACTION CURRENT ACCOUNT
   Receipts from Rest of World Equal
   Payments to Rest of World and
   Balance on Current Account

4. DOMESTIC CAPITAL ACCOUNT
   Gross Domestic Capital Formation Equals
   Gross Domestic Savings

5. FOREIGN TRANSACTION CAPITAL ACCOUNT
   Balance on Current Account Equals
   Payments to Rest of the World and
   Net Lending or Borrowing

6. DOMESTIC BALANCE SHEET
   Domestic Wealth Equals
   Domestic Tangible Assets and
   US Net International Position

7. US INTERNATIONAL POSITION
   US-Owned Assets Abroad Equal
   Foreign-Owned Assets in US and
   US Net International Position

Figure 1. Blueprint for an Expanded and Integrated Set of National Accounts for the United States
PRODUCTION ACCOUNT

- Gross Domestic Product Equals Gross Domestic Factor Outlay in Current Prices.

- Gross Domestic Product in Constant Prices Divided by Gross Domestic Factor Outlay in Constant Prices Is Equal to Productivity.

- Gross Domestic Factor Outlay Includes Inputs of Capital and Labor Services in Constant Prices, so that Productivity is Total Factor Productivity.

- Incorporation of Capital and Labor Services and Productivity into the National Accounts is the First Major Advance in Economic Measurement.
RECEIPTS AND EXPENDITURES

- Domestic Receipts Equals Domestic Expenditures in Current Prices.

- Integrated Macroeconomic Accounts Incorporate the National Income and Product Accounts and the Flow of Funds.

- Welfare is Incorporated into the National Accounts Through the Distribution of Personal Consumption Expenditures; the Level of Living is the Sum of Efficiency and Equity.

- Incorporation of Receipts and Expenditures in Constant Prices, and Social Welfare into the National Accounts Is the Second Major Advance in Economic Measurement.
The Industry-Level Production Account Gives the Output of Each Industry As a Function of Inputs of Capital (K), Labor (L), Energy (E), Materials (M), and Services (S).


Industry-Level Production Accounts Have Been Compiled for More than Forty Countries, Including Europe, North and South America, and Asia.

Industry-Level Production Accounts Have Been Incorporated into Systems of National Accounts; This Is the Third Major Advance in Economic Measurement.
The World KLEMS Initiative Was Established by Dale W. Jorgenson, Bart van Ark, and Marcel P. Timmer at Harvard University in Cambridge, Massachusetts.

LA KLEMS, the Regional Organization for Latin America, Was Coordinated by ECLAC in Santiago, Chile.

LA KLEMS Was Transferred to the Interamerican Development Bank (IDB) in Washington, DC, in 2016.

INTERNATIONAL COMPARISONS OF INDUSTRY-LEVEL PRODUCTIVITY LEVELS

- Data Sets for Two More Countries, Linked by Industry-Level Purchasing Power Parities Are Essential for Analyzing the Role of International Trade and Investment in Economic Growth.

- Purchasing Power Parities and Price Level Indices for the U.S. and Japan Show that the Yen Was Under-Valued Until 1985 and Has Been Over-Valued Since Then.

- The Overall Productivity Level for the U.S. Has Exceeded the Overall Productivity Level for Japan for the Period 1955-2012.

### TABLE 1
**PPP's AND PRICE LEVEL INDICES FOR OUTPUT AND KLEMS**

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<tbody>
<tr>
<td><strong>PPIs (Purchasing Power Parities)</strong></td>
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<tr>
<td><strong>Output (GDP)</strong></td>
<td>210.2</td>
<td>218.1</td>
<td>237.0</td>
<td>247.3</td>
<td>279.4</td>
<td>279.3</td>
<td>260.8</td>
<td>185.1</td>
<td>164.3</td>
<td>146.3</td>
<td>124.9</td>
<td>114.9</td>
<td>107.3</td>
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<tr>
<td><strong>Capital</strong></td>
<td>168.6</td>
<td>235.7</td>
<td>217.9</td>
<td>291.2</td>
<td>222.4</td>
<td>237.2</td>
<td>207.9</td>
<td>194.4</td>
<td>145.7</td>
<td>141.9</td>
<td>125.0</td>
<td>112.7</td>
<td>103.2</td>
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<tr>
<td><strong>Labor</strong></td>
<td>60.7</td>
<td>66.5</td>
<td>101.5</td>
<td>123.8</td>
<td>202.2</td>
<td>178.4</td>
<td>153.3</td>
<td>147.7</td>
<td>144.6</td>
<td>114.1</td>
<td>90.4</td>
<td>79.2</td>
<td>75.4</td>
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<tr>
<td><strong>Energy</strong></td>
<td>627.4</td>
<td>625.1</td>
<td>618.9</td>
<td>581.8</td>
<td>600.6</td>
<td>521.3</td>
<td>461.1</td>
<td>308.9</td>
<td>271.9</td>
<td>231.1</td>
<td>169.1</td>
<td>151.3</td>
<td>143.8</td>
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<tr>
<td><strong>Material</strong></td>
<td>270.8</td>
<td>284.3</td>
<td>259.3</td>
<td>255.3</td>
<td>258.1</td>
<td>218.3</td>
<td>193.6</td>
<td>154.3</td>
<td>135.5</td>
<td>128.3</td>
<td>112.3</td>
<td>106.1</td>
<td>93.1</td>
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<tr>
<td><strong>Service</strong></td>
<td>175.2</td>
<td>168.3</td>
<td>197.4</td>
<td>206.4</td>
<td>259.7</td>
<td>246.3</td>
<td>205.6</td>
<td>181.7</td>
<td>163.0</td>
<td>142.5</td>
<td>122.6</td>
<td>108.4</td>
<td>103.3</td>
</tr>
<tr>
<td><strong>(r0) GDP-expenditure based</strong></td>
<td>—</td>
<td>170.6</td>
<td>204.1</td>
<td>226.0</td>
<td>266.0</td>
<td>245.6</td>
<td>266.9</td>
<td>189.2</td>
<td>174.5</td>
<td>155.9</td>
<td>129.6</td>
<td>111.6</td>
<td>104.6</td>
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<tr>
<td><strong>Exchange rate</strong></td>
<td>360.0</td>
<td>360.0</td>
<td>360.0</td>
<td>360.0</td>
<td>256.8</td>
<td>226.8</td>
<td>238.5</td>
<td>144.8</td>
<td>94.1</td>
<td>107.8</td>
<td>119.2</td>
<td>97.8</td>
<td>79.8</td>
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<td><strong>PILs (Price Level Indices)</strong></td>
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<tr>
<td><strong>Output (GDP)</strong></td>
<td>0.58</td>
<td>0.60</td>
<td>0.86</td>
<td>0.86</td>
<td>0.94</td>
<td>1.09</td>
<td>0.87</td>
<td>1.28</td>
<td>1.75</td>
<td>1.36</td>
<td>1.13</td>
<td>1.30</td>
<td>1.34</td>
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<tr>
<td><strong>Capital</strong></td>
<td>0.53</td>
<td>0.74</td>
<td>0.88</td>
<td>0.80</td>
<td>0.83</td>
<td>1.09</td>
<td>0.93</td>
<td>1.40</td>
<td>1.89</td>
<td>1.14</td>
<td>1.29</td>
<td>1.30</td>
<td></td>
</tr>
<tr>
<td><strong>Labor</strong></td>
<td>0.17</td>
<td>0.18</td>
<td>0.28</td>
<td>0.34</td>
<td>0.67</td>
<td>0.79</td>
<td>0.93</td>
<td>1.02</td>
<td>1.54</td>
<td>1.80</td>
<td>1.14</td>
<td>1.17</td>
<td></td>
</tr>
<tr>
<td><strong>Energy</strong></td>
<td>1.74</td>
<td>1.74</td>
<td>1.72</td>
<td>1.62</td>
<td>2.02</td>
<td>2.30</td>
<td>1.93</td>
<td>2.13</td>
<td>2.89</td>
<td>2.14</td>
<td>1.53</td>
<td>1.72</td>
<td>1.80</td>
</tr>
<tr>
<td><strong>Material</strong></td>
<td>0.75</td>
<td>0.71</td>
<td>0.72</td>
<td>0.71</td>
<td>0.86</td>
<td>0.97</td>
<td>0.81</td>
<td>1.07</td>
<td>1.44</td>
<td>1.10</td>
<td>1.02</td>
<td>1.14</td>
<td>1.17</td>
</tr>
<tr>
<td><strong>Service</strong></td>
<td>0.49</td>
<td>0.47</td>
<td>0.55</td>
<td>0.57</td>
<td>0.88</td>
<td>1.09</td>
<td>0.86</td>
<td>1.25</td>
<td>1.73</td>
<td>1.32</td>
<td>1.11</td>
<td>1.24</td>
<td>1.29</td>
</tr>
</tbody>
</table>

*Notes:* The PPP for GDP-output based is defined as a translog index of industry-level PPP for value added, which is calculated by the double deflation method. The Price Level Indices are defined as the ratio of PPP to exchange rate. The PPP and exchange rate are defined by Japanese yen/US dollar. The PPP for GDP-expenditure based is the estimate by the Eurostat-OECD.

U.S.-JAPAN PRODUCTIVITY LEVELS, 1955-2012

Figure 8. Japan and US Total Factor Productivity Levels, 1955–2012

U.S.-JAPAN INDUSTRY-LEVEL PRODUCTIVITY, 2005

Figure 10. Industry Contributions to the Japan-US Total Factor Productivity Gap, 2005


Important Progress Has Been Made in the Measurement of Both Production and Welfare.