Appendix A

Glossary

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>( d_{53} = \frac{D_{53}}{K_{53}} )</td>
<td>1953 depreciation charges as ratio of 1953 gross fixed assets</td>
</tr>
<tr>
<td>( d_t^* = \frac{D_t}{K_{t-1}} )</td>
<td>Depreciation charges of the year ( t ) as ratio of gross fixed assets at end of year ( t-1 )</td>
</tr>
<tr>
<td>( e_{jt} = \left( \frac{S_t - S_{t-1}^r}{H_{t-1}} \right)_j )</td>
<td>Error in sales expectations of the ( j )th firm as ratio of end of previous year inventories</td>
</tr>
<tr>
<td>( e_t^{t-1} = \left( \frac{re}{f} \right)^{t-1} )</td>
<td>Proportion of planned capital expenditures indicated for expansion</td>
</tr>
<tr>
<td>( G = \frac{p_t^* + d_t^*}{0.13545} - 1 )</td>
<td>Gross profits relative to mean gross profits</td>
</tr>
<tr>
<td>( H )</td>
<td>Inventories in millions of 1954 dollars</td>
</tr>
<tr>
<td>( \Delta h_{jt} = \left( \frac{H_t - H_{t-1}}{H_{t-1}} \right)_j )</td>
<td>Inventory investment ratio of the ( j )th firm in the year ( t )</td>
</tr>
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<td>--------</td>
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<tr>
<td>$h^*<em>t = \left( \frac{k_t S_t - H</em>{t-1}}{H_{t-1}} \right)_j$</td>
<td>Desired inventory investment ratio component relating to current sales</td>
</tr>
<tr>
<td>$h^*<em>{j,t-1} = \left( \frac{k_t S</em>{t-1} - H_{t-1}}{H_{t-1}} \right)_j$</td>
<td>Desired inventory investment ratio component relating to previous sales</td>
</tr>
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<td>$h^*<em>t = \left( \frac{k t S^t</em>{t+1} - H_{t-1}}{H_{t-1}} \right)_j$</td>
<td>Desired inventory investment ratio component relating to sales expectations</td>
</tr>
<tr>
<td>$h^*<em>{j,t+1} = \left( \frac{k_t S^t</em>{t+1} - H_{t-1}}{H_{t-1}} \right)_j$</td>
<td>Desired inventory investment ratio component relating to previous sales expectations</td>
</tr>
<tr>
<td>$I_t$</td>
<td>Capital expenditures of the year $t$, in millions of 1954 dollars</td>
</tr>
<tr>
<td>$I^*_t$</td>
<td>Capital expenditure anticipations for the year $t+1$ in millions of 1954 dollars (presumably held at the end of the year $t$ and reported in the spring survey of the year $t+1$)</td>
</tr>
<tr>
<td>$i_t = \frac{I_t}{K_{57}}$</td>
<td>Capital expenditures in 1954 dollars as ratio of 1957 gross fixed assets</td>
</tr>
<tr>
<td>$i^*<em>t = \frac{I_t}{K</em>{t-1}}$</td>
<td>Capital expenditures in 1954 dollars as ratio of previous gross fixed assets</td>
</tr>
<tr>
<td>$i_{tAV} = (i_{t+1} + 2i_t + i_{t-1})/4$</td>
<td>Weighted, centered average capital expenditure ratio</td>
</tr>
<tr>
<td>$i^<em>_{t+1} = \frac{i^</em><em>{t+1}}{K</em>{57}}$</td>
<td>Capital expenditure anticipations one year ahead as ratio of 1957 gross fixed assets</td>
</tr>
<tr>
<td>$i^<em>_{t+1} = (1-e^{-i^</em>_t})i^*_t$</td>
<td></td>
</tr>
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<td>$i^<em>_{t+1} = e^{i^</em>_t}i^*_t$</td>
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<td>$i^<em>_{t+1} = (1-e^{-i^</em>_t})i^*_t$</td>
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</tr>
<tr>
<td>$h_{jt} = [(H_{t-1}/S_{t-1})<em>j + (H</em>{t-3}/S_{t-3})]/V_t$</td>
<td></td>
</tr>
<tr>
<td>$m_t = \frac{V_t}{NW_t + R_t + B_t}$</td>
<td></td>
</tr>
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<tr>
<td>( i_t^{t-1} = t^{t-1} )</td>
<td>Capital expenditure anticipations for the year ( t ) as ratio of 1957 gross fixed assets</td>
</tr>
<tr>
<td>( i_t^{t+4} = t^{t+4} )</td>
<td>Capital expenditure anticipations four years ahead as ratio of 1957 gross fixed assets</td>
</tr>
<tr>
<td>( i_t^{t+1} = t^{t+1} )</td>
<td>Capital expenditure anticipations one year ahead as ratio of previous gross fixed assets</td>
</tr>
<tr>
<td>( i_t^e = e_t^{t-1}i_t^e )</td>
<td>Ratio of expansion capital expenditures to previous gross fixed assets</td>
</tr>
<tr>
<td>( i_t^r = (1-e_t^{t-1})i_t^e )</td>
<td>Ratio of replacement and modernization capital expenditures to previous gross fixed assets</td>
</tr>
<tr>
<td>( i_t^{t+1} = e_t^{t+1}i_t^{t+1} )</td>
<td>Ratio of expansion capital expenditure anticipations to previous gross fixed assets</td>
</tr>
<tr>
<td>( i_t^{t+1} = (1-e_t^{t+1})i_t^{t+1} )</td>
<td>Ratio of replacement and modernization capital expenditure anticipations to previous gross fixed assets</td>
</tr>
<tr>
<td>( K )</td>
<td>Gross fixed assets in millions of dollars</td>
</tr>
<tr>
<td>( k_{jt} = [(H_{t-1}/S_{t-1})<em>j+(H</em>{t-2}/S_{t-2})_j ]</td>
<td>Desired inventory-to-sales ratio of the ( j )th firm in the year ( t )</td>
</tr>
<tr>
<td>[ m_t = \frac{V_t}{NW_t + R_t + B_t} ]</td>
<td>Ratio of market value of firm to net worth + depreciation reserve + bonded indebtedness</td>
</tr>
</tbody>
</table>
198 Factors in Business Investment

Symbol

\( P \)

Net profits (after taxes) in millions of 1954 dollars

\( P_t = \frac{P_t}{K_{57}} \)

Net profits in 1954 dollars as ratio of 1957 gross fixed assets

\( P_{pt} = \frac{P_t}{K_{p,t-1}} \)

Net profits in 1954 dollars as ratio of previous price-deflated gross fixed assets

\( P_t^* = \frac{P_t}{K_{t-1}} \)

Net profits in 1954 dollars as ratio of previous gross fixed assets

\( \Delta q_{igt} = \left( \frac{Q_t - Q_{t-1}}{Q_{t-1}} \right)_{igt} \)

The relative change in the price index for the group \( g \) containing the \( j \)th firm

\( R \)

Depreciation reserves in millions of dollars

\( r_t^d = R_t/K_{t-1} \)

Depreciation reserves as a ratio of previous gross fixed assets

\( RGP_t = p_t^* + d_t^* - \sum_{j=1}^{3} (p_{t-j}^* + d_{t-j}^*)/3 \)

Relative gross profits

\( r_t = \frac{P_t' + D_t + Z_t}{V_t} \)

Rate of return = (net profits + depreciation charges + interest payments) + market value of firm

\( S_t \)

Sales of the year, \( t \), in millions of 1954 dollars

\( S_t-1 \)

Sales of the year \( t - 1 \), in millions of 1954 dollars

\( (S_t - S_{t-1})/S_{t-1} \)

One year sales change ratio

\( (S_t - S_{t-2})/S_{t-2} \)

Three year sales change ratio

\( (S_t - S_{t-4})/S_{t-4} \)

Four year sales change ratio

\( S_t - S_{t-1} = S_t \)

\( S_{t-1} = (1 + s_t)^{t-1} \)

\( s_{t+1} = \frac{S_{t+1} - S_t}{S_t} \)

\( s_t = \frac{S_{t-1} - S_t}{S_t} \)

\( S_{t+1} = (1 + s_t)^{t+1} \)

\( \Delta s_t = \frac{3(S_t - S_{t-1})}{S_t + S_t} \)

\( \Delta s_{t+1} = \frac{3(S_t - S_t)}{S_t + S_t} \)

\( s_{t+4} = \frac{S_{t+4} - S_t}{S_t} \)

\( s_{t+1,4} = \frac{S_{t+4} - S_{t+4}}{S_{t+4}} \)
Symbol

\[ S_t - S_t^{t-1} = S_t - (1 + s_t^{t-1})S_{t-1} \]

\[ S_t^{t-1} = (1 + s_t^{t-1})S_{t-1} \]

\[ s_{t+1}^{t} = \frac{S_{t+1} - S_t}{S_t} \quad \text{and} \]

\[ s_t^{t-1} = \frac{S_t^{t-1} - S_{t-1}}{S_{t-1}} \]

\[ S_{t+1}^{t-1} = (1 + s_{t+1}^{t})S_t \]

\[ \Delta s_t = \frac{3(S_t - S_{t-1})}{S_{56} + S_{57} + S_{58}} \]

\[ \Delta s_t^* = \frac{3(S_t - S_{t-1})}{S_t + S_{t-1} + S_{t-2}} \]

\[ s_{t+4}^{t} = \frac{S_{t+4} - S_t}{S_t} \]

\[ s_{t+1,4}^{t} = \frac{S_{t+4}^{t} - S_{t+1}^{t}}{S_{t+1}^{t}} \quad \text{and} \]

\[ s_{t+1}^{t} \]

Description

Implicit short-run realizations in millions of 1954 dollars

Sales anticipated for the year \( t \) at the end of the year \( t - 1 \), in millions of 1954 dollars

Short-run sales expectations = expected percent change in physical volume of sales from McGraw-Hill survey, converted to pure decimal

Sales anticipated for the year \( t + 1 \) at the end of the year \( t \) in millions of 1954 dollars

Relative sales change ratio, price-deflated, 1956-1958 denominator

Relative sales change ratio, price-deflated, previous three year denominator

Long-run expected sales change over four years, from McGraw-Hill surveys of 1952 to 1955 = expected percent change in the physical volume of sales over four years, converted to pure decimal

Long-run expected sales change over three years, from McGraw-Hill surveys of 1956 to 1968 = expected percent change in the physi-
200 Factors in Business Investment

Symbol

\[ s_{t-3}, t = \frac{S_t^{t-4} - S_t^{t-3}}{S_t^{t-3}} \]

\[ s^{g3} = \frac{S_t^{t} - S_{t-3}^{t}}{S_{t-3}^{t}} \]

\[ s^{g4} = \frac{S_t^{t} - S_{t-4}^{t}}{S_{t-4}^{t}} \]

\[ s^{g4'} = \frac{S_t^{t} - (1 + s_{t-3}^{t-4})(1 + s_{t-3}^{t-4}, t)}{S_{t-4}^{t}} \]

\[ s^{t} = \frac{S_t^{t} - S_{t-1}^{t} - s_t^{t-1}}{S_{t-1}^{t}} \]

\[ s^t = (1 + s_{t+1, 4}^{t})^3 - 1 \]

\[ T \]

\[ u^a \]

\[ u^p \]

\[ u^c = \frac{u^a}{u^p} \]

\[ V_t = B_t + F_t \]

\[ \Delta v_t = \frac{V_t - V_{t-1}}{V_{t-1}} \]

Description

cal volume of sales over three years, beginning one year ahead, converted to pure decimal

Long-run sales realizations over three years, ratio, \( t = 1960 \) to 1968

Long-run sales realizations over four years, ratios, \( t = 1956 \) to 1959

Long-run sales realizations over four years, synthesized, ratios, \( t = 1960 \) to 1968

Short-run sales realizations, ratios

Average long-run sales change expectations at annual rates, 1956-1968

Time trend integer beginning with zero for first year of dependent variable

Actual utilization of capacity

Preferred utilization of capacity

Ratio of actual to preferred rate of utilization of capacity

Market value of firm = sum of end of year bonded indebtedness and market value of common and preferred stock

Relative change in market value of firm