

Table 1: The MPSGE Code: Example 1

```

$prod:Y(g,r)$oth(g,r) s:esub(g,r) e:1 fe.tl(e):0 klm:0 m(klm):esubn(g,r) va(klm):esubkl(g,r)
o:P(g,r) q:vom(g,r) a:RA(r) t:rto(g,r)
i:PA(i,r) q:vafm(i,g,r)
+ i.tl:$fe(i) m:$not e(i) e:$(e(i) and not fe(i)) p:pref(i,g,r)
i:PCARB(r)#(fe) q:refco2(fe,g,r) p:1e-6 fe.tl:
i:PL(r) q:vlm(g,r) p:pref("pl",g,r) va: a:RA(r) t:rtf("lab",g,r)
i:RK(r) q:vkm(g,r) p:pref("rk",g,r) va: a:RA(r) t:rtf("cap",g,r)
i:PR(g,r) q:vrn(g,r) p:pref("pr",g,r) a:RA(r) t:rtf("res",g,r)

```

Figure 1: Nesting Structure for Example 1

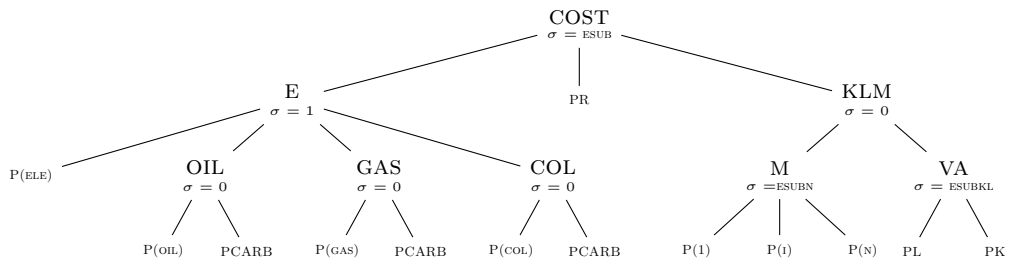


Table 2: LaTeX TiKZ Code for Example 1

```

\documentclass{article}
\usepackage{tikz}
\usetikzlibrary{er}
\begin{document}
\begin{tikzpicture}
[
    level distance = 10mm,
    level 1/.style={sibling distance=38mm},
    level 2/.style={sibling distance=23mm},
    level 3/.style={sibling distance=11mm}]
\node{\shortstack{\textsc{cost}}\{\tiny $\sigma = \mbox{\textsc{esub}}$\}}
  child {node {\shortstack{\textsc{e}}\{\tiny $\sigma = 1$\}}
    child {node{\tiny \textsc{P(ele)}}}
    child {node{\shortstack{\textsc{oil}}\{\tiny $\sigma=0$\}}
      child {node{\tiny \textsc{P(oil)}}}
      child {node{\tiny \textsc{PCARB}}}}
    child {node{\shortstack{\textsc{gas}}\{\tiny $\sigma=0$\}}
      child {node{\tiny \textsc{P(gas)}}}
      child {node{\tiny \textsc{PCARB}}}}
    child {node{\shortstack{\textsc{col}}\{\tiny $\sigma=0$\}}
      child {node{\tiny \textsc{P(col)}}}
      child {node{\tiny \textsc{PCARB}}}}
    child {node {\tiny \textsc{PR}}}
    child {node {\shortstack{\textsc{klm}}\{\tiny $\sigma=0$\}}
      child {node{\shortstack{\textsc{m}}\{\tiny
        $\sigma=\mbox{\textsc{esubn}}$\}}
        child {node{\tiny \textsc{P(1)}}}
        child {node{\tiny \textsc{P(i)}}}
        child {node{\tiny \textsc{P(n)}}}}
      child {node{\shortstack{\textsc{va}}\{\tiny
        $\sigma=\mbox{\textsc{esubkl}}$\}}
        child {node{\tiny \textsc{PL}}}
        child {node{\tiny \textsc{PK}}}}}};
\end{tikzpicture}
\end{document}

```

Table 3: The MPSGE Code: Example 2

```

$prod:y(j,r)$vom(j,r)  s:0  i.tl:esubd(i)  va:esubva(j)
o:py(j,r)              q:vom(j,r)    a:GOVT(r)  t:rto(j,r)
i:py(i,r)              q:vdfm(i,j,r)  p:(1+rtd0(i,j,r)) i.tl: a:GOVT(r) t:rtd(i,j,r)
i:pm(i,r)              q:vifm(i,j,r)  p:(1+rtfi0(i,j,r)) i.tl: a:GOVT(r) t:rtfi(i,j,r)
i:ps(sf,j,r)          q:vfm(sf,j,r)  p:(1+rtf0(sf,j,r)) va: a:GOVT(r) t:rtf(sf,j,r)
i:pf(mf,r)            q:vfm(mf,j,r)  p:(1+rtf0(mf,j,r)) va: a:GOVT(r) t:rtf(mf,j,r)
    
```

Figure 2: Nesting Structure for Example 2

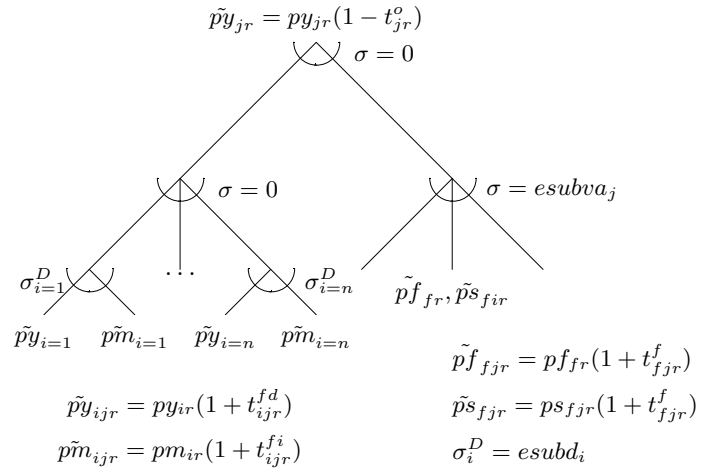


Table 4: LaTeX EPIC Code for Example 2

```

\documentclass{article}
\usepackage{epic,eepic}
\begin{document}
\begin{picture}(11,12)(0,-3)
\put(4,-1){\makebox(0,0)[c]{\small{\$\tilde{py}_{ijr} = py_{ir} (1 + t^{fd}_{ijr})\$}}}
\put(4,-2){\makebox(0,0)[c]{\small{\$\tilde{pm}_{ijr} = pm_{ir} (1 + t^{fi}_{ijr})\$}}}
\put(10,0){\makebox(0,0)[l]{\small{\$\tilde{pf}_{fjr} = pf_{fr} (1 + t^{ff}_{fjr})\$}}}
\put(10,-1){\makebox(0,0)[l]{\small{\$\tilde{ps}_{fjr} = ps_{fjr} (1 + t^{ff}_{fjr})\$}}}
\put(10,-2){\makebox(0,0)[l]{\small{\$\sigma^D_i = esubd_i\$}}}
\put(4,1.9){\makebox(0,0)[c]{\$\ldots\$}}
\put(7,7.5){\makebox(0,0)[c]{\small{\$\tilde{py}_{jir} = py_{jir} (1-t^o_{jir})\$}}}
\put(1,0.5){\makebox(0,0)[c]{\small{\$\tilde{py}_{i=1}\$}}}
\put(3,0.5){\makebox(0,0)[c]{\small{\$\tilde{pm}_{i=1}\$}}}
\put(5,0.5){\makebox(0,0)[c]{\small{\$\tilde{py}_{i=n}\$}}}
\put(7,0.5){\makebox(0,0)[c]{\small{\$\tilde{pm}_{i=n}\$}}}
\put(10,1.5){\makebox(0,0)[c]{\small{\$\tilde{pf}_{fr},\tilde{ps}_{fir}\$}}}
\put(8.5,6.75){\makebox(0,0)[c]{\small{\$\sigma=0\$}}}
\put(5.5,3.75){\makebox(0,0)[c]{\small{\$\sigma=0\$}}}
\put(1.5,1.75){\makebox(0,0)[r]{\small{\$\sigma^D_{i=1}\$}}}
\put(6.75,1.75){\makebox(0,0)[l]{\small{\$\sigma^D_{i=n}\$}}}
\put(10.75,3.75){\makebox(0,0)[l]{\small{\$\sigma=esubva_j\$}}}
\put(2,2){\oval(1,1)[b]}
\put(4,4){\oval(1,1)[b]}
\put(6,2){\oval(1,1)[b]}
\put(7,7){\oval(1,1)[b]}
\put(10,4){\oval(1,1)[b]}
\drawline[1](1,1)(2,2)(3,1)
\drawline[1](5,1)(6,2)(7,1)
\drawline[1](2,2)(4,4)(6,2)
\drawline[1](4,4)(4,2)
\drawline[1](4,4)(7,7)(10,4)
\drawline[1](8,2)(10,4)(12,2)
\drawline[1](10,4)(10,2)
\end{picture}
\end{center}
\end{document}

```