Second, for $F_{Y_0(0,0)|D=0,M=0}(y)$ we have

$$F^{-1}_{U|00}(F_{Y_0(0,0)|D=0,M=0}(y)) = h^{-1}(0,0,0;y). \tag{1}$$

Combining () and () yields,

$$h(0,0,1,h^{-1}(0,0,0;y)) = F^{-1}_{Y_1(0,0)|D=0,M=0} \circ F_{Y_0(0,0)|D=0,M=0}(y). \tag{2}$$

The left sides of () and () are equal. In contrast to (), () contains only distributions that can be identified from observable data. In particular, $F_{Y_t(0,0)|D=0,M=0}(y) = \Pr(Y_t(0,0) \leq y|D = 0, M = 0) = \Pr(Y_t \leq y|D = 0, M = 0)$. Accordingly, we can identify $F^{-1}_{Y_1(0,0)|D=1,M=0} \circ F_{Y_0(0,0)|D=1,M=0}(y)$ by $Q_{00}(y) \equiv F^{-1}_{Y_1|D=0,M=0} \circ F_{Y_0|D=0,M=0}(y)$. Parsing Y_0 through $Q_{00}(\cdot)$ in the treated group without mediator gives

$$\begin{aligned}
&E[Q_{00}(Y_0)|D=1,M=0] \\
&= E[F^{-1}_{Y_1|D=0,M=0} \circ F_{Y_0|D=0,M=0}(Y_0)|D=1,M=0], \\
&= E[F^{-1}_{Y_1(0,0)|D=0,M=0} \circ F_{Y_0(0,0)|D=0,M=0}(Y_0(1,0))|D=1,M=0], \\
&\overset{A1,A3b}{=} E[h(0,0,1,h^{-1}(0,0,0;Y_0(1,0)))|D=1,M=0], \\
&\overset{A2}{=} E[h(0,0,1,h^{-1}(0,0,0;Y_0(0,0)))|D=1,M=0], \\
&\overset{A1,A3a}{=} E[F^{-1}_{Y_1(0,0)|D=1,M=0} \circ F_{Y_0(0,0)|D=1,M=0}(Y_0(0,0))|D=1,M=0], \\
&= E[Y_1(0,0)|D=1,M=0] = E[Y_1(0,0)|D=1,M(1)=0],
\end{aligned} \tag{3}$$

which has data support because of Assumption 4a.