Step	Algorithm:		
1a			
4			
	where		
2			
3	while do		
2,3		٨	
5a			
	where		
6			
8			
5b			
7			
2			
	endwhile		
2,3		^ ¬()
1b			

Step	Algorithm: $[y] := SYMV_LUNB_VAR4(A, x, y)$
1a	$y = \widehat{y}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{TL} is 0×0 , x_T has 0 rows, y_T has 0 rows
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right)$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \wedge m(A_{TL}) < m(A)$
5a	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ x_B \end{array}\right) \rightarrow \left(\begin{array}{c} x_0 \\ \chi_1 \\ x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ y_B \end{array}\right) \rightarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ y_2 \end{array}\right) $ where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row
6	$ \begin{pmatrix} \frac{y_0}{\psi_1} \\ \frac{y_0}{\psi_2} \end{pmatrix} = \begin{pmatrix} \frac{\widehat{y}_0 + A_{00}x_0 + (a_{10}^T)T\chi_1 + A_{20}^Tx_2}{\widehat{\psi}_1 + a_{10}^Tx_0} \\ \frac{\widehat{\psi}_2 + A_{20}x_0}{\widehat{y}_2 + A_{20}x_0} \end{pmatrix} $
8	$\begin{pmatrix} \frac{y_0}{\psi_1} \\ y_2 \end{pmatrix} := \begin{pmatrix} \frac{y_0}{\psi_1 + a_{11}\chi_1 + a_{21}^T x_2} \\ \frac{y_0}{\psi_1 + a_{21}\chi_1} \end{pmatrix}$
5b	$ \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BR} \end{vmatrix} \leftarrow \left(\frac{A_{00}}{a_{01}} \begin{vmatrix} a_{01} \\ a_{11} \end{vmatrix} a_{12}^{T} \\ A_{20} \begin{vmatrix} a_{21} \\ a_{21} \end{vmatrix} A_{22}\right), \left(\frac{x_{T}}{x_{B}}\right) \leftarrow \left(\frac{x_{0}}{\chi_{1}} \\ x_{2}\right), \left(\frac{y_{T}}{y_{B}}\right) \leftarrow \left(\frac{y_{0}}{\psi_{1}} \\ y_{2}\right) $
7	$ \left(\frac{y_0}{\psi_1}\right) = \left(\frac{\widehat{y}_0 + A_{00}x_0 + (a_{10}^T)T\chi_1 + A_{20}^Tx_2}{\widehat{\psi}_1 + a_{10}^Tx_0 + a_{11}\chi_1 + a_{21}^Tx_2}}{\widehat{y}_2 + A_{20}x_0 + a_{21}\chi_1}\right) $
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right)$
	endwhile
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \land \neg (m(A_{TL}) < m(A))$
1b	$[y] = \operatorname{Symvl}(A, x, \widehat{y})$

Algorithm: $[y] := SYMV_L_UNB_VAR4(A, x, y)$

$$A \to \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BL} \end{vmatrix}, x \to \left(\frac{x_T}{x_B}\right), y \to \left(\frac{y_T}{y_B}\right)$$

where A_{TL} is 0×0 , x_T has 0 rows, y_T has 0 rows

while $m(A_{TL}) < m(A)$ do

$$\left(\frac{A_{TL} | A_{TR}}{A_{BL} | A_{BR}}\right) \to \left(\frac{A_{00} | a_{01} | A_{02}}{a_{10}^{T} | a_{11} | a_{12}^{T}}}\right), \left(\frac{x_{T}}{x_{B}}\right) \to \left(\frac{x_{0}}{x_{1}}\right), \left(\frac{y_{T}}{y_{B}}\right) \to \left(\frac{y_{0}}{y_{1}}\right)$$

where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row

$$\left(\frac{y_0}{\psi_1}\right) := \left(\frac{y_0}{\psi_1 + a_{11}\chi_1 + a_{21}^T x_2} \right) \\
\frac{y_0}{\psi_1 + a_{11}\chi_1 + a_{21}^T x_2} \\
y_2 + a_{21}\chi_1$$

$$\left(\begin{array}{c|c}
A_{TL} & A_{TR} \\
\hline
A_{BL} & A_{BR}
\end{array}\right) \leftarrow \left(\begin{array}{c|c}
A_{00} & a_{01} & A_{02} \\
\hline
a_{10}^T & \alpha_{11} & a_{12}^T \\
\hline
A_{20} & a_{21} & A_{22}
\end{array}\right), \left(\begin{array}{c}
x_T \\
x_B
\end{array}\right) \leftarrow \left(\begin{array}{c}
x_0 \\
\hline
x_1 \\
x_2
\end{array}\right), \left(\begin{array}{c}
y_T \\
y_B
\end{array}\right) \leftarrow \left(\begin{array}{c}
y_0 \\
\hline
\psi_1 \\
y_2
\end{array}\right)$$

endwhile

Step	Algorithm: $[y] := \text{Symv_Lunb_var4}(A, x, y)$
1a	$y = \widehat{y}$
4	where
2	
3	while do
2,3	^
5a	
	where
6	
8	
5b	
7	
2	
	endwhile
2,3	$\wedge \neg (\hspace{1cm})$
1b	$[y] = \operatorname{Symvl}(A, x, \widehat{y})$

Step	Algorithm: $[y] := SYMV_L_UNB_VAR4(A, x, y)$
1a	$y = \widehat{y}$
4	
T	
	where
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right)$
3	while do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \wedge$
5a	
	where
6	
8	
5b	
7	
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right)$
	endwhile
2	$ \left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \land \neg ($
1b	$[y] = \operatorname{Symv} A(A, x, \widehat{y})$

Step	Algorithm: $[y] := Symv_L_unb_var4(A, x, y)$
1a	$y = \hat{y}$
4	where
2	$ \left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) $
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \wedge m(A_{TL}) < m(A)$
5a	
	where
6	
8	
5b	
7	
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right)$
	endwhile
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \wedge \neg (m(A_{TL}) < m(A))$
1b	$[y] = \operatorname{Symvl}(A, x, \widehat{y})$

Step	Algorithm: $[y] := SYMV_L_UNB_VAR4(A, x, y)$
1a	$y = \widehat{y}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{TL} is 0×0 , x_T has 0 rows, y_T has 0 rows
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right)$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \wedge m(A_{TL}) < m(A)$
5a	
	where
6	
8	
5b	
7	
2	$\left(rac{y_T}{y_B} ight) = \left(rac{\widehat{y}_T + A_{TL}x_T + A_{BL}^Tx_B}{\widehat{y}_B + A_{BL}x_T} ight)$
	endwhile
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \wedge \neg (m(A_{TL}) < m(A))$
1b	$[y] = \operatorname{Symv} A(A, x, \widehat{y})$

Step	Algorithm: $[y] := SYMV_L_UNB_VAR4(A, x, y)$
1a	$y = \widehat{y}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{TL} is 0×0 , x_T has 0 rows, y_T has 0 rows
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right)$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \wedge m(A_{TL}) < m(A)$
5a	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ x_B \end{array}\right) \rightarrow \left(\begin{array}{c} x_0 \\ \chi_1 \\ x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ y_B \end{array}\right) \rightarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ y_2 \end{array}\right) $ where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row
6	
8	
5b	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ \hline x_B \end{array}\right) \leftarrow \left(\begin{array}{c} x_0 \\ \hline \chi_1 \\ \hline x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ \hline y_B \end{array}\right) \leftarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ \hline y_2 \end{array}\right) $
7	
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right)$
	endwhile
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \land \neg (m(A_{TL}) < m(A))$
1b	$[y] = \operatorname{Symv} A(A, x, \widehat{y})$

Step	Algorithm: $[y] := SYMV_L_UNB_VAR4(A, x, y)$
1a	$y = \widehat{y}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{TL} is 0×0 , x_T has 0 rows, y_T has 0 rows
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right)$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \wedge m(A_{TL}) < m(A)$
5a	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ x_B \end{array}\right) \rightarrow \left(\begin{array}{c} x_0 \\ \chi_1 \\ x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ y_B \end{array}\right) \rightarrow \left(\begin{array}{c} y_0 \\ \psi_1 \\ y_2 \end{array}\right) $ where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row
6	$ \left(\frac{y_0}{\psi_1}\right) = \left(\frac{\widehat{y}_0 + A_{00}x_0 + (a_{10}^T)T\chi_1 + A_{20}^Tx_2}{\widehat{\psi}_1 + a_{10}^Tx_0}\right) \\ \frac{\widehat{\psi}_1 + a_{10}^Tx_0}{\widehat{y}_2 + A_{20}x_0}\right) $
8	
5b	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ \hline x_B \end{array}\right) \leftarrow \left(\begin{array}{c} x_0 \\ \hline \chi_1 \\ \hline x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ \hline y_B \end{array}\right) \leftarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ \hline y_2 \end{array}\right) $
7	
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right)$
	endwhile
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \land \neg (m(A_{TL}) < m(A))$
1b	$[y] = \operatorname{Symv} A(A, x, \widehat{y})$

Step	Algorithm: $[y] := SYMV_L_UNB_VAR4(A, x, y)$
1a	$y = \hat{y}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{TL} is 0×0 , x_T has 0 rows, y_T has 0 rows
2	$ \left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) $
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \wedge m(A_{TL}) < m(A)$
5a	$ \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BL} \end{vmatrix} A_{BR}\right) \rightarrow \left(\frac{A_{00}}{a_{01}} \begin{vmatrix} a_{01} \\ a_{11} \end{vmatrix} a_{12} \\ A_{20} \begin{vmatrix} a_{21} \\ a_{21} \end{vmatrix} A_{22}\right), \left(\frac{x_T}{x_B}\right) \rightarrow \left(\frac{x_0}{\chi_1} \\ \frac{\chi_1}{x_2}\right), \left(\frac{y_T}{y_B}\right) \rightarrow \left(\frac{y_0}{\psi_1} \\ \frac{\psi_1}{y_2}\right) $
6	where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row $ \begin{pmatrix} \frac{y_0}{\psi_1} \\ \frac{1}{y_2} \end{pmatrix} = \begin{pmatrix} \frac{\widehat{y}_0 + A_{00}x_0 + (a_{10}^T)T\chi_1 + A_{20}^Tx_2}{\widehat{\psi}_1 + a_{10}^Tx_0} \\ \frac{\widehat{\psi}_1 + a_{10}^Tx_0}{\widehat{y}_2 + A_{20}x_0} \end{pmatrix} $
8	
5b	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ \hline x_B \end{array}\right) \leftarrow \left(\begin{array}{c} x_0 \\ \hline \chi_1 \\ \hline x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ \hline y_B \end{array}\right) \leftarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ \hline y_2 \end{array}\right) $
7	$ \left(\frac{y_0}{\psi_1}\right) = \left(\frac{\widehat{y}_0 + A_{00}x_0 + (a_{10}^T)T\chi_1 + A_{20}^Tx_2}{\widehat{\psi}_1 + a_{10}^Tx_0 + a_{11}\chi_1 + a_{21}^Tx_2}\right) \\ \frac{\widehat{y}_2 + A_{20}x_0 + a_{21}\chi_1}{\widehat{y}_2 + A_{20}x_0 + a_{21}\chi_1} $
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right)$
	endwhile
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \land \neg (m(A_{TL}) < m(A))$
1b	$[y] = \operatorname{Symv} A(A, x, \widehat{y})$

Step	Algorithm: $[y] := SYMV_L_UNB_VAR4(A, x, y)$
1a	$y = \hat{y}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, x \to \begin{pmatrix} x_T \\ x_B \end{pmatrix}, y \to \begin{pmatrix} y_T \\ y_B \end{pmatrix}$ where A_{TL} is 0×0 , x_T has 0 rows, y_T has 0 rows
2	$ \left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^Tx_B}{\widehat{y}_B + A_{BL}x_T}\right) $
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \wedge m(A_{TL}) < m(A)$
5a	$ \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BR} \end{vmatrix} \right) \to \left(\frac{A_{00}}{a_{01}} \begin{vmatrix} a_{01} \\ a_{11} \end{vmatrix} \begin{vmatrix} A_{02} \\ a_{11} \end{vmatrix} \right), \left(\frac{x_T}{x_B}\right) \to \left(\frac{x_0}{\chi_1} \\ \frac{\chi_1}{\chi_2}\right), \left(\frac{y_T}{y_B}\right) \to \left(\frac{y_0}{\psi_1} \\ \frac{\chi_1}{\chi_2}\right) $ where a_{01} is 1 × 1 as a bas 1 raw of bas 1 raw.
6	where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row $ \begin{pmatrix} \frac{y_0}{\psi_1} \\ \frac{y_0}{\psi_2} \end{pmatrix} = \begin{pmatrix} \frac{\widehat{y}_0 + A_{00}x_0 + (a_{10}^T)T\chi_1 + A_{20}^Tx_2}{\widehat{\psi}_1 + a_{10}^Tx_0} \\ \frac{\widehat{y}_2 + A_{20}x_0} \end{pmatrix} $
8	$\left(\frac{y_0}{\psi_1}\right) := \left(\frac{y_0}{\frac{\psi_1 + a_{11}\chi_1 + a_{21}^T x_2}{y_2 + a_{21}\chi_1}}\right)$
5b	$ \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BR} \end{vmatrix}\right) \leftarrow \left(\frac{A_{00}}{a_{01}} \begin{vmatrix} a_{01} \\ a_{10} \end{vmatrix} \begin{vmatrix} A_{02} \\ a_{11} \end{vmatrix} \begin{vmatrix} a_{11} \\ a_{12} \end{vmatrix} \right), \left(\frac{x_T}{x_B}\right) \leftarrow \left(\frac{x_0}{\chi_1} \\ x_2 \end{vmatrix}, \left(\frac{y_T}{y_B}\right) \leftarrow \left(\frac{y_0}{\psi_1} \\ y_2 \end{vmatrix}\right) $
7	$ \left(\frac{y_0}{\psi_1}\right) = \left(\frac{\widehat{y}_0 + A_{00}x_0 + (a_{10}^T)T\chi_1 + A_{20}^Tx_2}{\widehat{\psi}_1 + a_{10}^Tx_0 + a_{11}\chi_1 + a_{21}^Tx_2}{\widehat{y}_2 + A_{20}x_0 + a_{21}\chi_1}\right) $
2	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right)$
	endwhile
2,3	$\left(\frac{y_T}{y_B}\right) = \left(\frac{\widehat{y}_T + A_{TL}x_T + A_{BL}^T x_B}{\widehat{y}_B + A_{BL}x_T}\right) \land \neg (m(A_{TL}) < m(A))$
1b	$[y] = \operatorname{Symv} A(A, x, \widehat{y})$

Algorithm: $[y] := SYMV_L_UNB_VAR4(A, x, y)$
$A \to \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BL} \end{vmatrix}, x \to \left(\frac{x_T}{x_B}\right), y \to \left(\frac{y_T}{y_B}\right)$ where A_{TL} is 0×0 , x_T has 0 rows, y_T has 0 rows
while $m(A_{TL}) < m(A)$ do
$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} x_T \\ \hline x_B \end{array}\right) \rightarrow \left(\begin{array}{c} x_0 \\ \hline \chi_1 \\ \hline x_2 \end{array}\right), \left(\begin{array}{c} y_T \\ \hline y_B \end{array}\right) \rightarrow \left(\begin{array}{c} y_0 \\ \hline \psi_1 \\ \hline y_2 \end{array}\right) $ where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row
$ \left(\frac{y_0}{\psi_1}\right) := \left(\frac{y_0}{\psi_1 + a_{11}\chi_1 + a_{21}^T x_2} \right) \\ \frac{y_0}{\psi_1 + a_{21}\chi_1} $
$ \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BR} \end{vmatrix} \leftarrow \left(\frac{A_{00}}{a_{01}} \begin{vmatrix} a_{01} \\ a_{11} \\ A_{21} \end{vmatrix} a_{11} \begin{vmatrix} a_{12} \\ A_{22} \end{vmatrix}, \left(\frac{x_T}{x_B}\right) \leftarrow \left(\frac{x_0}{\chi_1} \\ x_2 \end{vmatrix}, \left(\frac{y_T}{y_B}\right) \leftarrow \left(\frac{y_0}{\psi_1} \\ y_2 \end{vmatrix}\right) $
endwhile

Algorithm: $[y] := SYMV_L_UNB_VAR4(A, x, y)$

$$A \to \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BL} \end{vmatrix} \right), x \to \left(\frac{x_T}{x_B}\right), y \to \left(\frac{y_T}{y_B}\right)$$

where A_{TL} is 0×0 , x_T has 0 rows, y_T has 0 rows

while $m(A_{TL}) < m(A)$ do

$$\left(\frac{A_{TL} | A_{TR}}{A_{BL} | A_{BR}}\right) \to \left(\frac{A_{00} | a_{01} | A_{02}}{a_{10}^{T} | a_{11} | a_{12}^{T}}}\right), \left(\frac{x_{T}}{x_{B}}\right) \to \left(\frac{x_{0}}{x_{1}}\right), \left(\frac{y_{T}}{y_{B}}\right) \to \left(\frac{y_{0}}{y_{1}}\right)$$

where α_{11} is 1×1 , χ_1 has 1 row, ψ_1 has 1 row

$$\left(\frac{y_0}{\psi_1}\right) := \left(\frac{y_0}{\psi_1 + a_{11}\chi_1 + a_{21}^T x_2} \right) \\
\frac{y_0}{\psi_1 + a_{11}\chi_1 + a_{21}^T x_2} \\
y_2 + a_{21}\chi_1$$

$$\left(\begin{array}{c|c}
A_{TL} & A_{TR} \\
\hline
A_{BL} & A_{BR}
\end{array}\right) \leftarrow \left(\begin{array}{c|c}
A_{00} & a_{01} & A_{02} \\
\hline
a_{10}^T & \alpha_{11} & a_{12}^T \\
\hline
A_{20} & a_{21} & A_{22}
\end{array}\right), \left(\begin{array}{c}
x_T \\
x_B
\end{array}\right) \leftarrow \left(\begin{array}{c}
x_0 \\
\hline
x_1 \\
x_2
\end{array}\right), \left(\begin{array}{c}
y_T \\
y_B
\end{array}\right) \leftarrow \left(\begin{array}{c}
y_0 \\
\hline
\psi_1 \\
y_2
\end{array}\right)$$

endwhile