

```
ClearAll["Global`*"]
```

$$\Pi = \varphi \left(1 + \varphi^2 / 4\right)^{(1/2)} - \varphi^2 / 2;$$

```
(*  
Our calibration of the variance of the  
annual permanent idiosyncratic shocks, from C-S  
*)
```

$$\sigma_{2\psi\text{Ann}} = 0.012;$$
$$\sigma_{\psi\text{Ann}} = \sigma_{2\psi\text{Ann}}^{1/2};$$

```
(*  
Our calibration of the annual transitory shock  
*)
```

$$\sigma_{2\theta\text{Ann}} = 0.03;$$
$$\sigma_{\theta\text{Ann}} = 0.03^{1/2};$$

```
(*  
Translation of permanent shock to quarterly rate  
*)  
 $\sigma_{2\psi\text{Qtr}} = (\sigma_{2\psi\text{Ann}}) / 4;$   
 $\sigma_{2\varPsi\text{Qtr}} = 0.00004;$  (* Calibration from paper *)  
 $\sigma_{2\varPsi\varTheta\text{Qtr}} = \sigma_{2\psi\text{Qtr}} + \sigma_{2\varPsi\text{Qtr}};$  (*Combined idiosyncratic and annual *)
```

```
(* Translation of transitory shock to quarterly rate *)  
 $\sigma_{2\theta\text{Qtr}} = 4 \sigma_{2\theta\text{Ann}};$   
 $\sigma_{2\theta\text{Qtr}} = 0.00001;$ 
```

```
(* Quarterly Standard deviations *)  
 $\sigma_{\theta\text{Qtr}} = (\sigma_{2\theta\text{Qtr}})^{1/2};$   
 $\sigma_{\theta\text{Qtr}} = \sigma_{2\theta\text{Qtr}}^{1/2};$   
 $\sigma_{\psi\text{Qtr}} = (\sigma_{2\psi\text{Qtr}})^{1/2};$   
 $\sigma_{\varPsi\text{Qtr}} = 0.00004^{1/2};$ 
```

```
(* Ratio of quarterly permanent to quarterly transitory standard deviations *)  
 $\varphi_{\text{Ind}} = (\sigma_{\psi\text{Qtr}} / \sigma_{\theta\text{Qtr}});$   
 $\varphi_{\text{Agg}} = (\sigma_{\varPsi\text{Qtr}} / \sigma_{\theta\text{Qtr}});$   
 $\varphi = \varphi_{\text{Ind}};$   
 $\Pi_{\text{Ind}} = \Pi;$   
 $\varphi = \varphi_{\text{Agg}};$   
 $\Pi_{\text{Agg}} = \Pi;$ 
```

```
MatrixForm[{"πInd", "πAgg"}, {πInd, πAgg}]
```

$$\begin{pmatrix} \pi\text{Ind} & \pi\text{Agg} \\ 0.146107 & 0.828427 \end{pmatrix}$$

```
AR1Ind = (1 - πInd);
```

```
AR1Agg = (1 - πAgg);
```

```
MatrixForm[{"AR1Ind", "AR1Agg"}, {AR1Ind, AR1Agg}]
```

$$\begin{pmatrix} \text{AR1Ind} & \text{AR1Agg} \\ 0.853893 & 0.171573 \end{pmatrix}$$