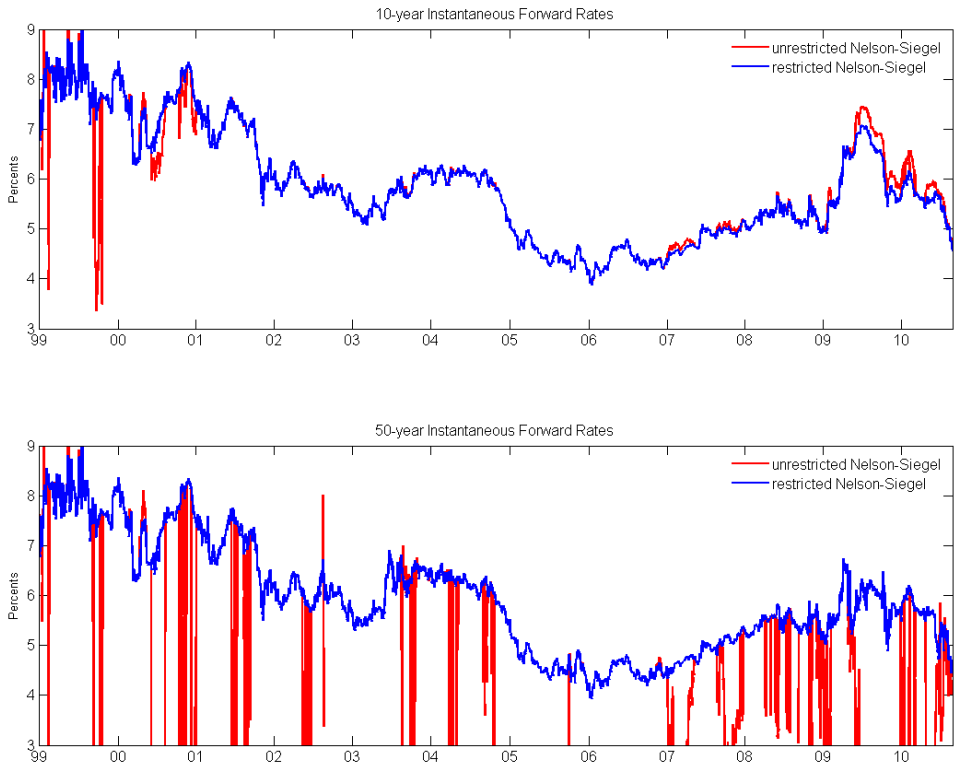
The Czech Treasury Yield Curve from 1999 to the Present

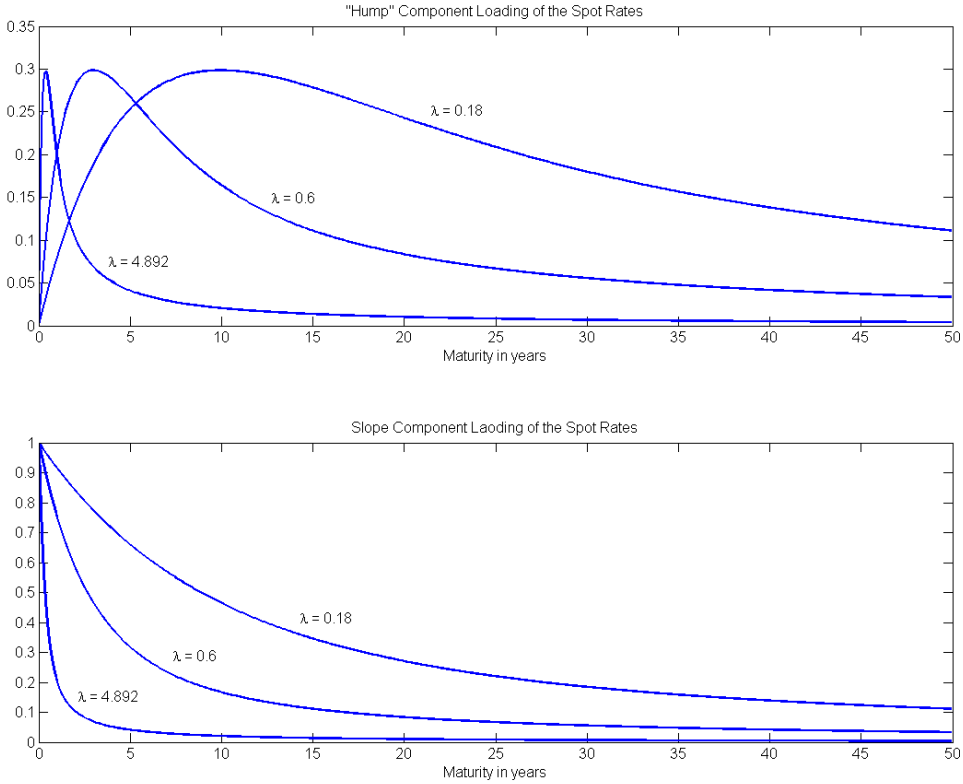
The Electronic Appendix

Figure 1A: Impact of Catastrophic Jumps to Forward Rates



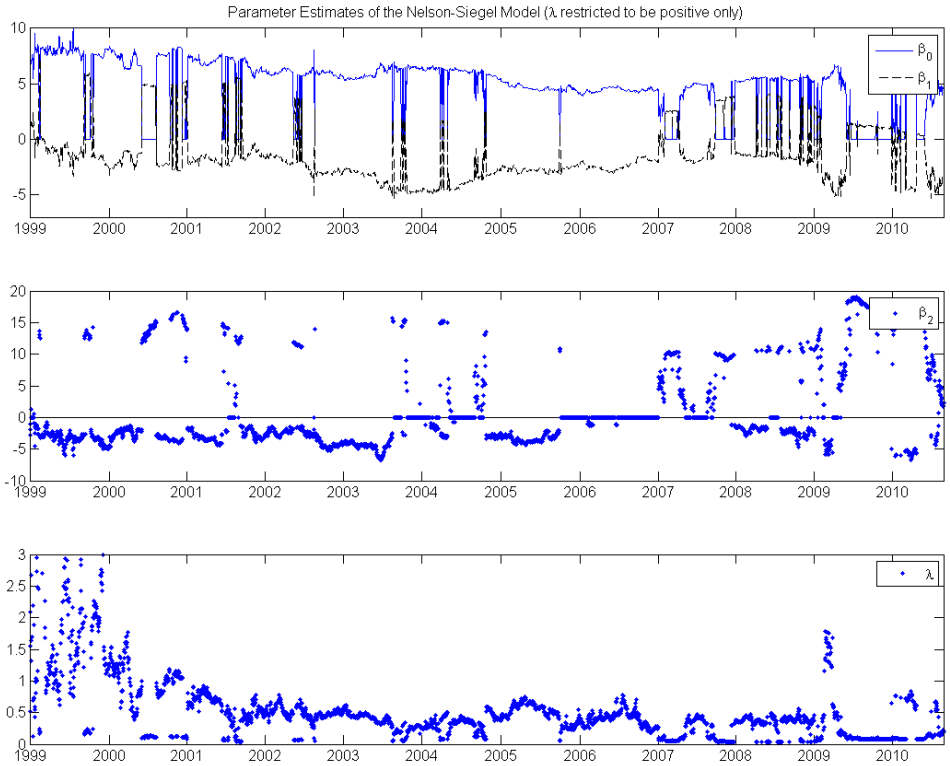
The top chart compares the evolution of 10-year instantaneous forward rates for the unrestricted ($\lambda > 0$) Nelson-Siegel model and restricted (λ restricted from below by λ^{min} given by (24)) Nelson-Siegel model. The bottom chart compares the evolution of 50-year instantaneous forward rates for the same models. The differences in instantaneous forward rates for the unrestricted versus restricted model are driven by the catastrophic jumps in β_0.

Figure 2A: Component Loadings



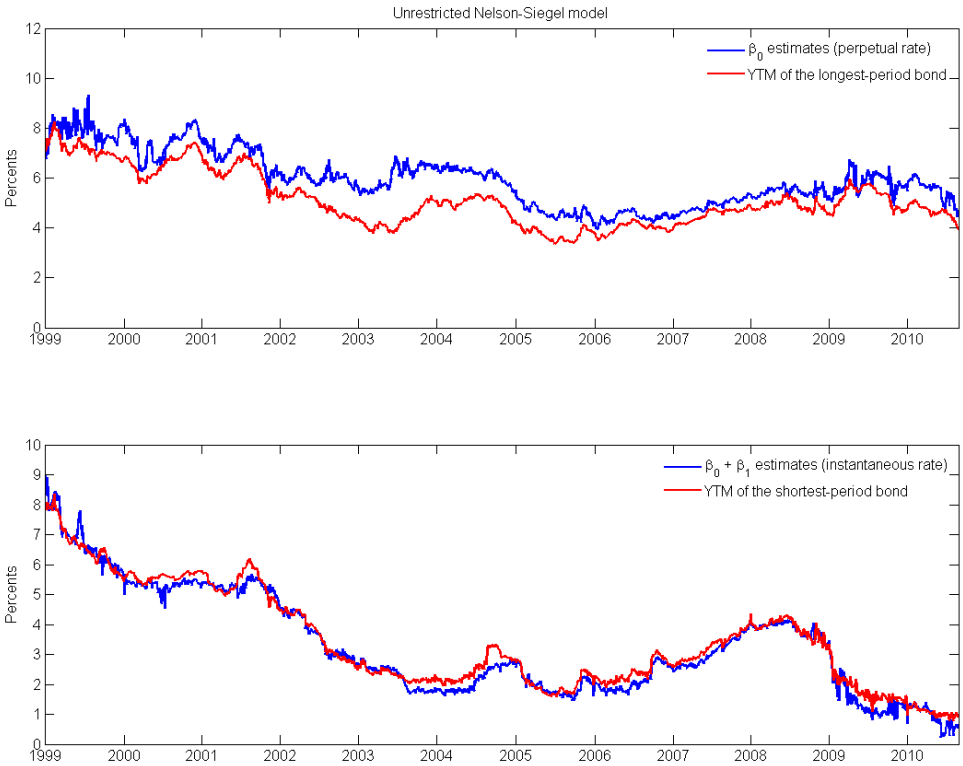
The top chart plots the "hump" component loadings and the bottom chart plots the slope component loadings of the Nelson-Siegel model for three different λ values. The $\lambda = 0.18$ is the minimal value of λ estimates for our data set, whereas $\lambda = 0.60$ is the average value of the λ estimates and finally $\lambda = 4.89$ is the maximal value of λ estimates.

Figure 3A: Unrestricted Nelson-Siegel Model



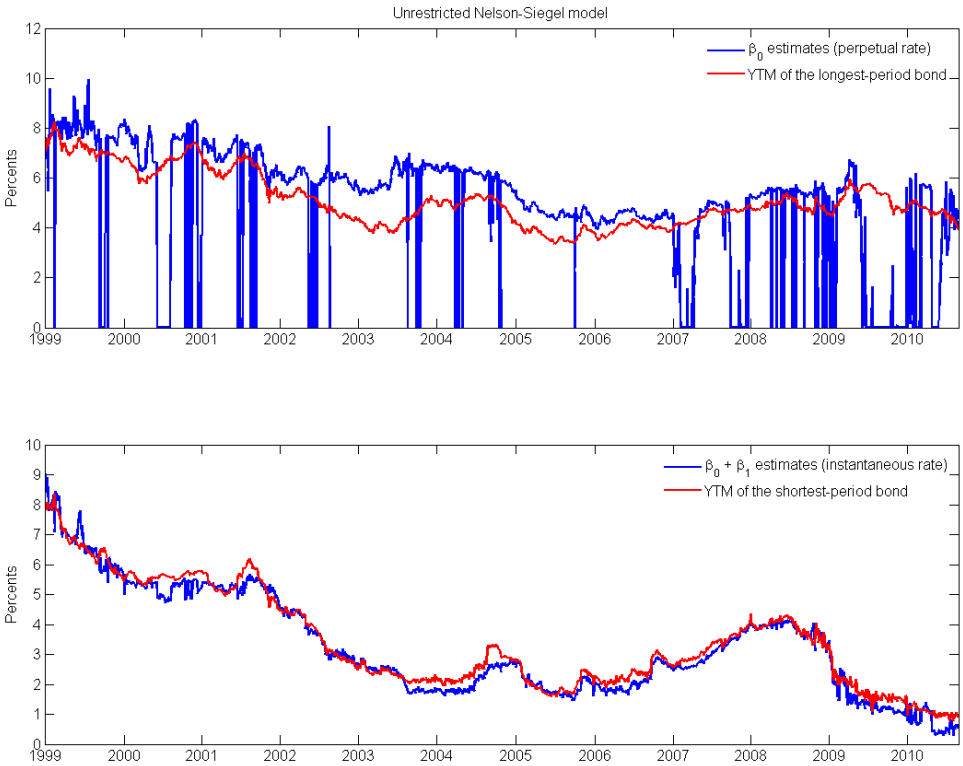
This figure captures evolution of the parameter estimates of the unrestricted ($\lambda > 0$, $\beta_0 > 0$) Nelson-Siegel model. Compare to the estimates of the restricted model which are plotted in Figure 3 in the paper.

Figure 4A: Yields to Maturity versus Betas (Restricted Model)



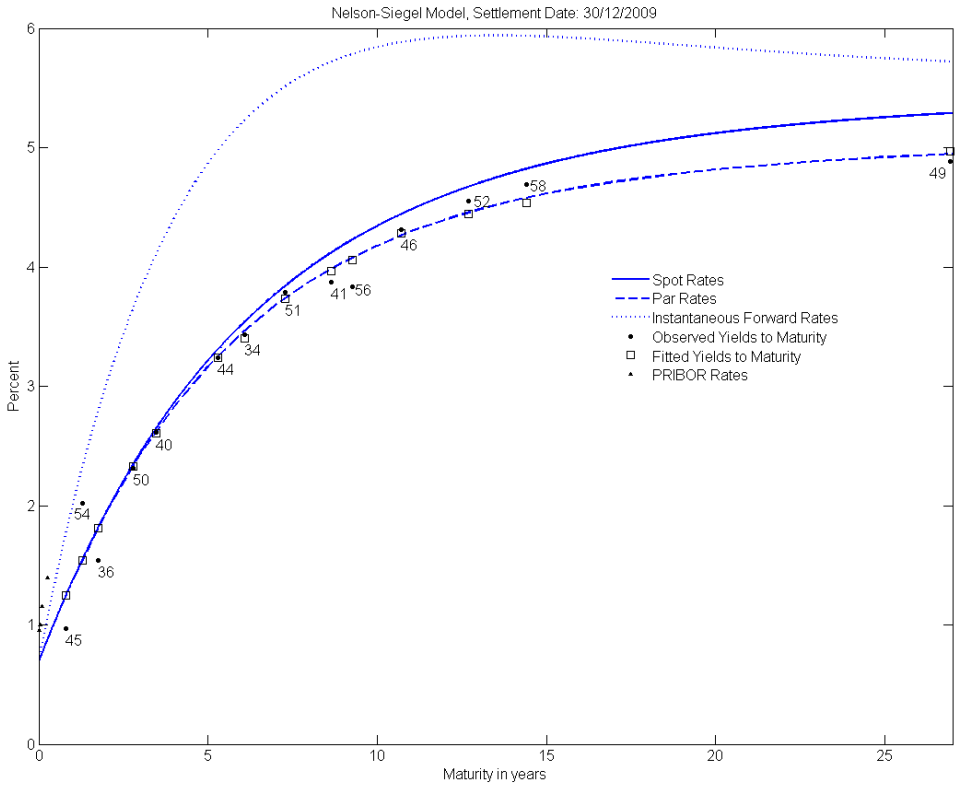
This figure compares the evolution of β_0 estimates and $\beta_0+\beta_1$ estimates of the restricted Nelson-Siegel model with yields to maturity of the longest-period bond and the shortest-period bond, respectively.

Figure 5A: Yields to Maturity versus Betas (Unrestricted Model)



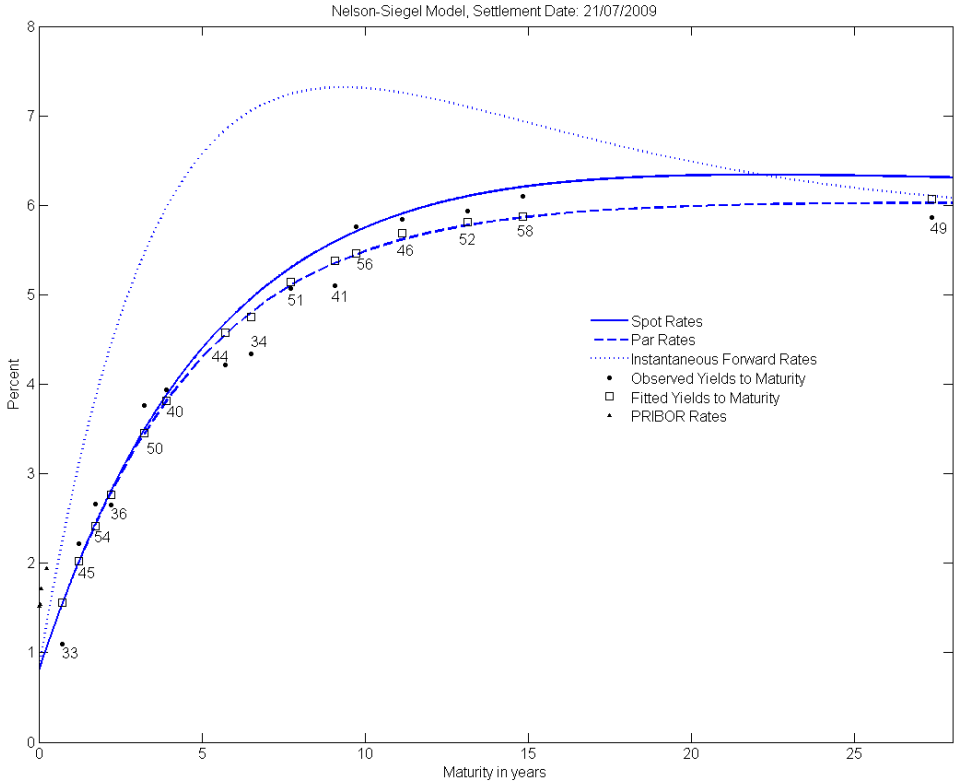
This figure compares the evolution of β_0 estimates and $\beta_0 + \beta_1$ estimates of the unrestricted Nelson-Siegel model with yields to maturity of the longest-period bond and the shortest-period bond, respectively.

Figure 6A: The Czech Yield Curve on December 30, 2009



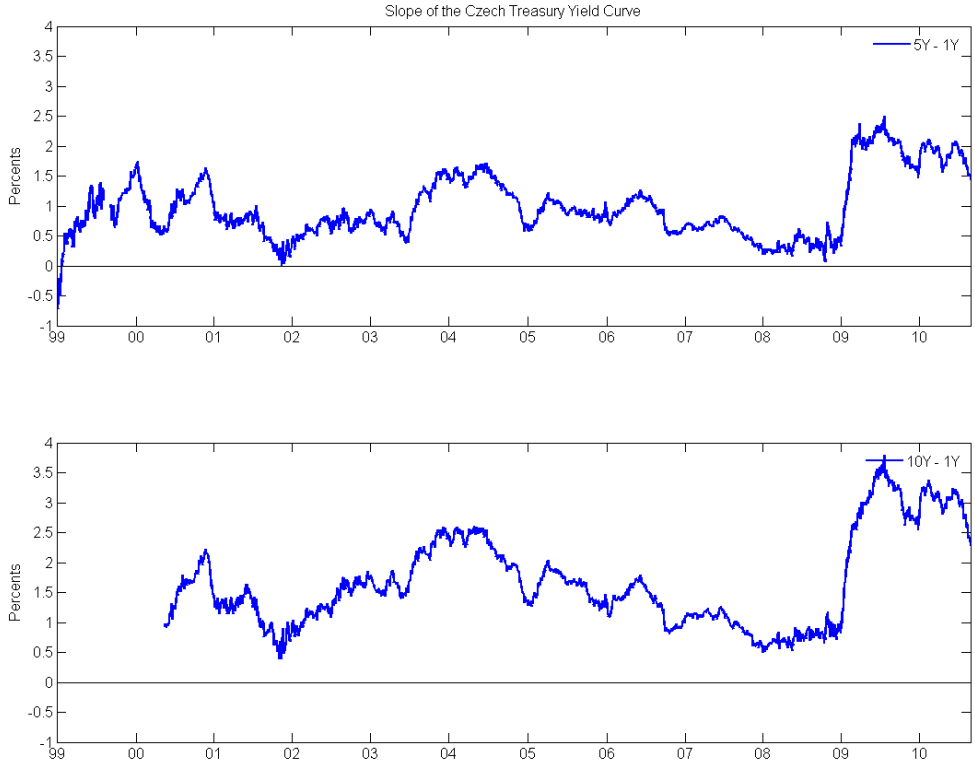
This figure captures the Czech Treasury yield curve estimated by the Nelson-Siegel model on December 30, 2009. On this day, the Maximum Absolute Error (MaxAE) reaches its maximum value in the entire estimated period.

Figure 7A: The Czech Yield Curve on July 21, 2009



This figure captures the Czech Treasury yield curve estimated by the Nelson-Siegel model on July 21, 2009. On this day, the Root Mean Squared Error (RMSE) reaches its maximum value in the entire estimated period.

Figure 8A: Slope of the Czech Treasury Yield Curve



The top chart plots the evolution of the slope of the Czech Treasury yield curve as the 5-year minus 1-year spot rate. The bottom chart plots the evolution of the slope of the Czech Treasury yield curve as the 10-year minus 1-year spot rate.