Defense Spending Spillovers

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Military Expenditure Data

Our data on military expenditure as a percentage of GDP comes from SIPRI.

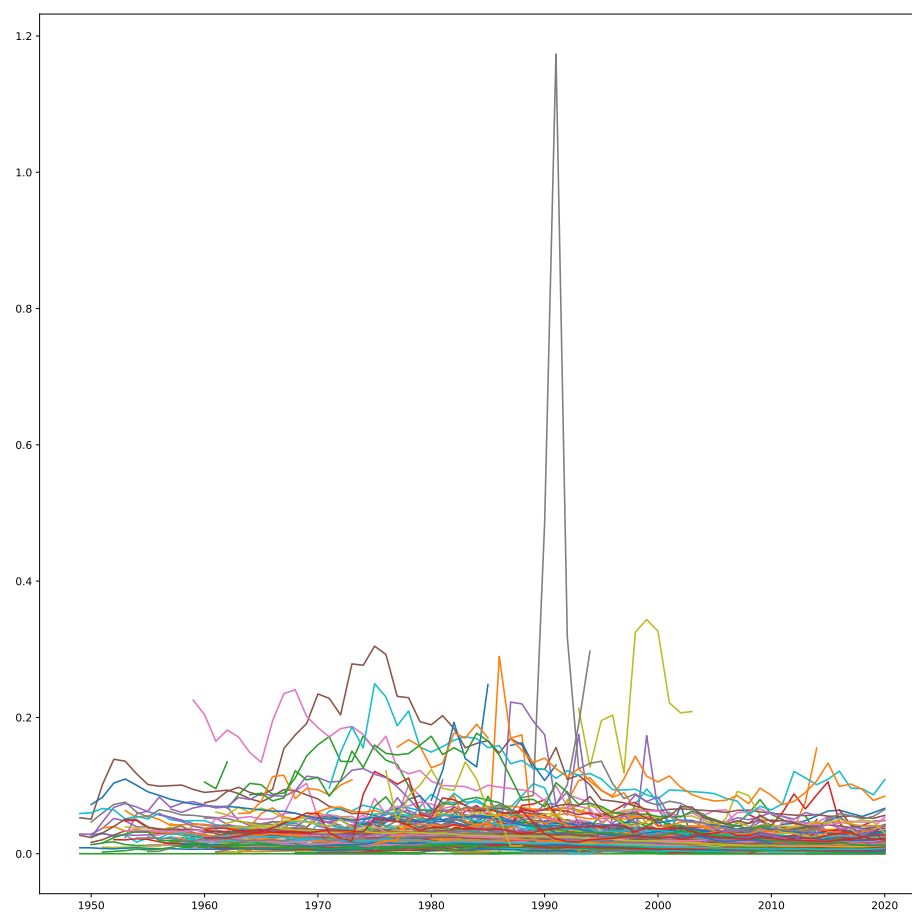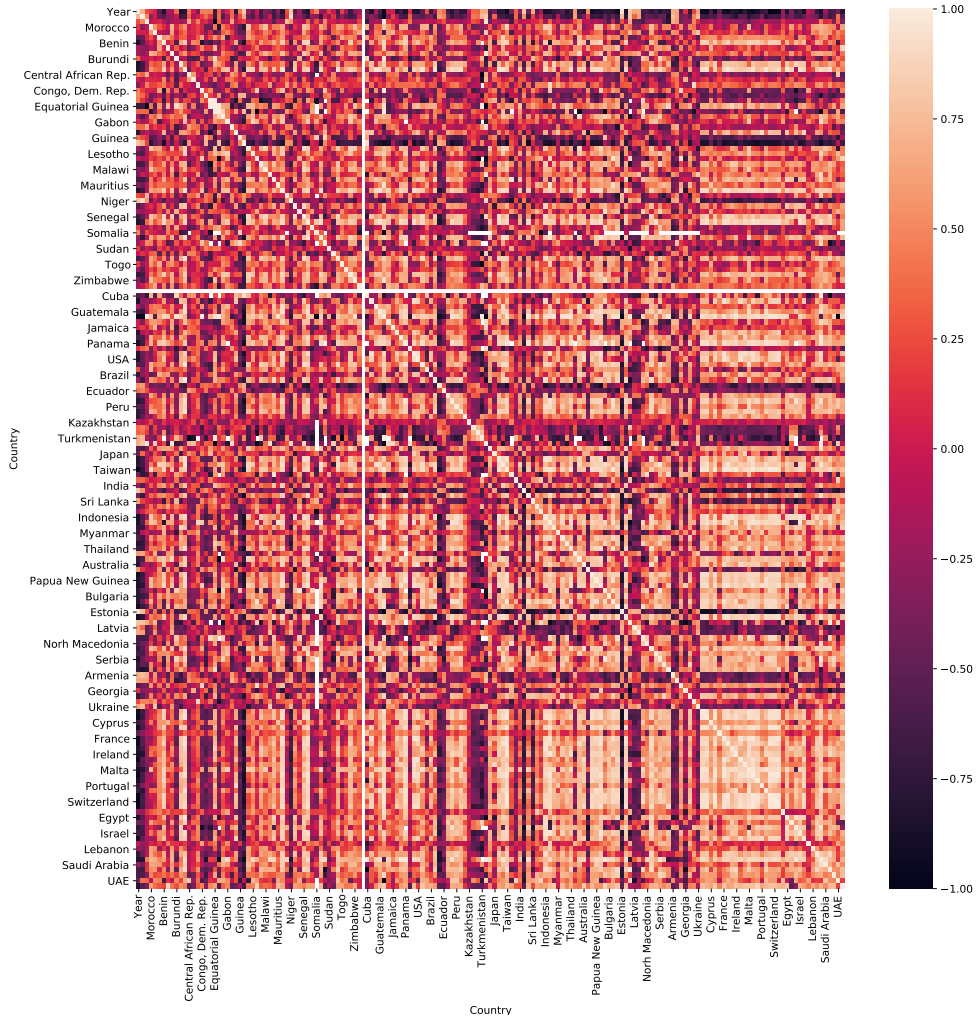Figure 1: Military Expenditure as Percentage of GDP Time Series for Countries

Figure 2: Correlations Between Country Military Spending

The Missing Values Problem

In order to use PCA and the LASSO, we need to figure out a way to handle missing values in the panel. Here I interpolate values between data points where we have spending information for a country, and also restrict the sample to observations after 1995.
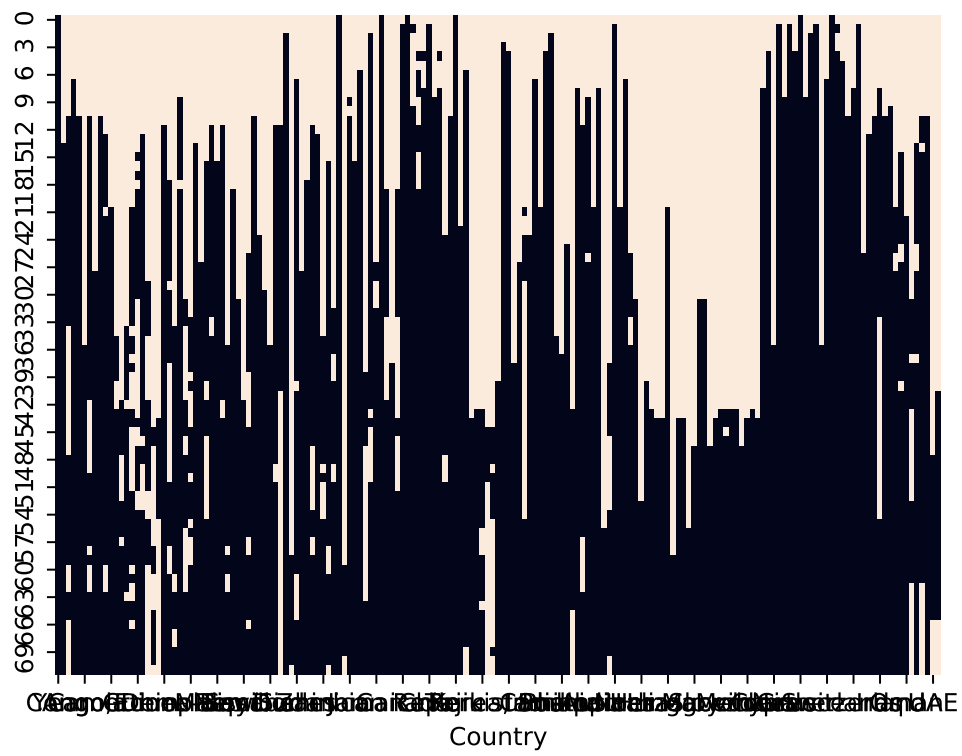
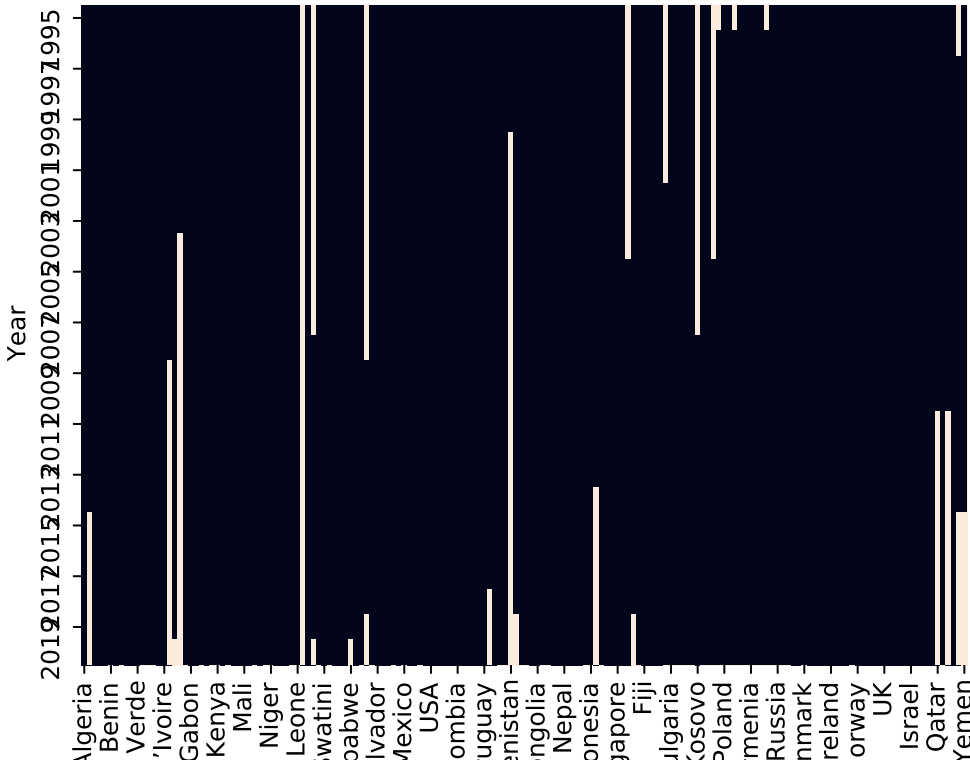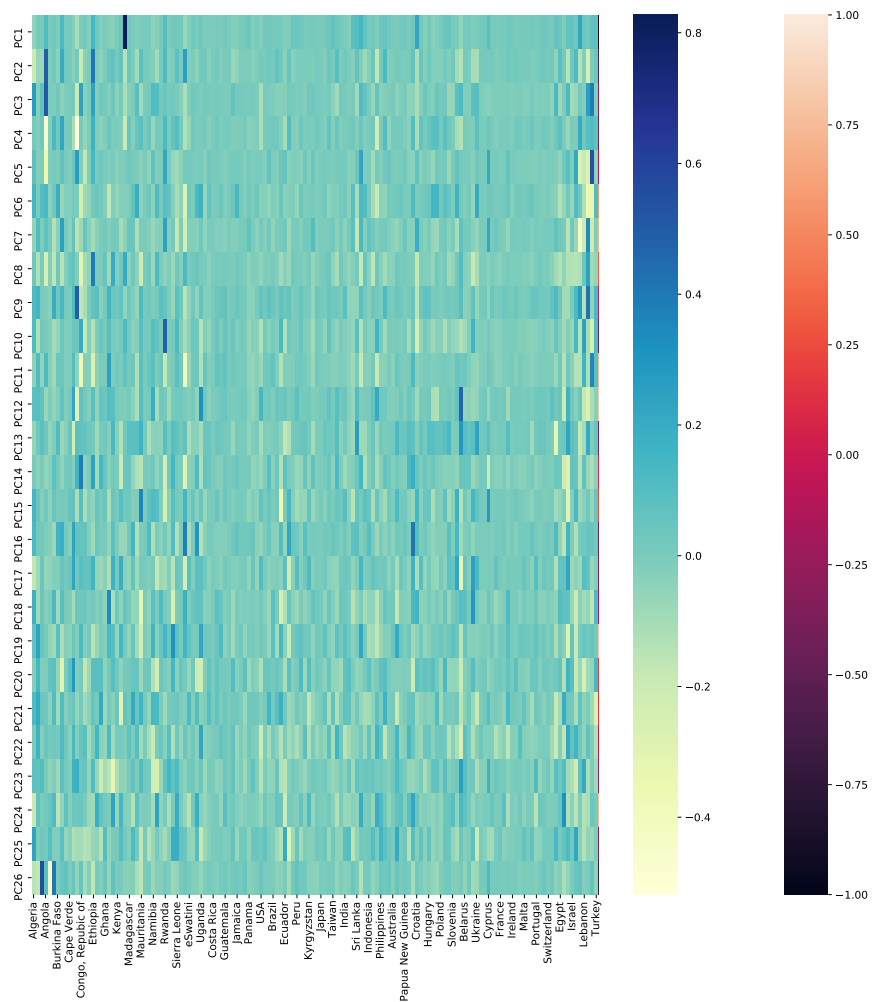Figure 3: Missing Values Before Interpolation

Figure 4: Missing Values After Interpolation and Sample Restriction

PCA Results

I performed a PCA to see if there were components which explained a large amount of the variation in spending across countries and over time.

Figure 5: Military Spending PCA Loadings

The data is very well summarized with very few principal components.

Figure 6: Military Spending PCA Share of Variance Explained

Cumulative explained variance
7 Principal Components explain [95.0%] of the variance.