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The Economic Impact of Trump: Conclusions from an Impact Evaluation Analysis

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Summary:

The Trump Administration's economic policy represents a variety of government interventions designed to stimulate higher output growth as well as higher employment. However, the policy mix adopted in President Trump's economic policy was rather unusual since expansionary fiscal policy – including tax rate reductions – were combined with an aggressive trade policy; the latter concerned mainly China, but even OECD partner countries were affected and this - in an interdependency analysis - raises questions about negative repercussion effects on US economic performance. Here, in a statistical and empirical analysis, the Panel Data Approach - combined with LASSO methodology - is used to generate a synthetical counterfactual for the US economic performance so that one can evaluate what kind of impact Trump's economic policy can be observed on GDP, unemployment and trade, where Newey-West HAC variance-covariance estimators are used for inference analysis. New findings on the extent to which Trump's economic policy really raised the US economic performance indicators – in various fields – beyond "normal" economic dynamics are derived. Looking at 2017-2019, the comparison of US economic performance with that of a synthetical "twin country" (i.e. a US "doppelgänger" in the absence of Trumpian policies) is useful and suggests that the Trump Administration's performance is clearly less successful than the US President has claimed when arguing that the economic performance of the US under his leadership was exceptionally good. Trump's economic policy has undermined output growth and worsened the current account and the trade balance, respectively; gross fixed capital formation and the unemployment rate have better performed than predicted.

Zusammenfassung:

Die Wirtschaftspolitik der Trump-Administration steht für eine Vielzahl von Regierungsinterventionen, die ein höheres Produktionswachstum sowie eine höhere Beschäftigung fördern sollen. Der Policy-Mix in der Wirtschaftspolitik von Präsident Trump war jedoch eher ungewöhnlich, da eine expansive Fiskalpolitik – einschließlich Steuersatzsenkungen – mit einer aggressiven Handelspolitik kombiniert wurde; letztere betraf vor allem China, aber auch OECD-Partnerländer, und dies wirft – in einer Wechselwirkungsanalyse – Fragen nach den negativen Auswirkungen auf die Wirtschaftsleistung der USA auf. Hier wird in einer statistischen und empirischen Analyse der Panel-Daten-Ansatz – kombiniert mit der LASSO-Methodologie – verwendet, um einen synthetischen Kontrafakt für die US-Wirtschaftsleistung zu generieren, so dass man beurteilen kann, welche Art von Auswirkungen Trumps Wirtschaftspolitik auf BIP, Arbeitslosigkeit und Handel zu beobachten ist, wobei Newey-West HAC Varianz-Kovarianz-Schätzer für die Inferenzanalyse verwendet werden. Es werden neue Erkenntnisse darüber gewonnen, inwieweit Trumps Wirtschaftspolitik die Indikatoren der US-Wirtschaftsleistung – in verschiedenen Bereichen – tatsächlich über die „normale“ wirtschaftliche Dynamik hinaus angehoben hat. Mit Blick auf 2017-2019 ist der Vergleich der US-Wirtschaftsleistung mit der eines synthetischen „Zwillingslandes“ (d.h. eines „Doppelgängers“ der USA in Abwesenheit der Trump-Politik) nützlich und legt nahe, dass die Leistung der Trump-Regierung deutlich weniger erfolgreich ist, als der US-Präsident behauptet hat, als er argumentierte, dass die Wirtschaftsleistung der USA unter seiner Führung außergewöhnlich gut war. Trumps Wirtschaftspolitik hat das Produktionswachstum untergraben und die Leistungsbilanz bzw. die Handelsbilanz verschlechtert; die Bruttoanlageinvestitionen und die Arbeitslosenquote haben besser abgeschnitten als vorhergesagt.

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1. Introduction

The economic performance of the United States is a crucial dynamic for the American population as well as for the world economy – the US accounts for about 15% of world real income (based on World Bank purchasing power parity figures). On 8 November 2016, Donald J. Trump won the 58th presidential election and on January 20, 2017, he was inaugurated as the 45th President of the United States. In accordance with the campaign slogans “Make America Great Again” and “America First”, the Trump Administration followed a populist strategy which included a protectionist trade policy and certain other policy interventions. Deregulation plus lowering corporate tax rates and income tax rates were key elements of Trump’s economic policy – coupled with an aggressive trade policy vis-à-vis both China and many OECD countries (WELFENS, 2019b). Key goals of the Trump Administration concerned raising output growth and a reduction of the trade balance deficit (HASSETT, 2017) where the government’s policy obviously ignored deficit problems to a large extent.

There are few academic economists who support the Trump Administration’s economic policy approach – although a few well-known economists seem to hold President Trump dear, including John F. Cogan and John B. Taylor from the Heritage Foundation, who argued on October 6 in an op-ed in the Wall Street Journal that Trump’s economic growth performance is outstanding and that higher unemployment has brought a decline in economic inequality – before the Corona shock hit the US. The subsequent analysis raises serious doubts about this positive perception of Trump’s economic growth policy, but also the underlying characteristics of the course of fiscal policy under the Trump Administration also raise doubts.

The Congressional Budget Office (CBO, 2020) has projected that a continuation of Trump’s deficit policy would result in a government debt-GDP ratio of 180% by 2050, up from about 100% in 2019. This implies that around 2030, the US would most likely lose the AAA rating which it still had with two of the three leading rating agencies at the end of 2019. The Corona economic shock of 2020 has, of course, reinforced these critical medium- and long-term debt-ratio perspectives. While the following analysis looks into the difference between a “normal” US economic performance over the period from 2017-2019 and the performance under the impact of the Trump Administration’s policy interventions, the analysis presented does not consider such long run debt-GDP problems which themselves would bring about a higher real interest rate and could slow down the long run growth rates.

As regards Trump’s fiscal policy, it was rather typical of what one would expect from a Republican President, namely to reduce tax rates and raise military expenditures - which translated into a high deficit-GDP ratio (FRANKEL, 2006). In 2018/19, the employment level in the US strongly increased, along with output growth during an economic upswing. However, it is unclear whether or not the Trump Administration really achieved a sustained increase of the growth of US real income and GDP, respectively. Part of the US output acceleration in 2018/19 has apparently reflected the unusual increase in the US deficit-GDP ratio during the economic upswing in the United States.

The IMF's US Article IV Report (IMF, 2019b) suggested some critical points in the economic policy of the Trump Administration where most aspects emphasized in the report refer to medium term policy aspects – and actually ignore long run effects of the US economic policy; key points raised by the IMF were that the US had achieved the longest expansion in its economic history, that the unemployment rate in 2018/19 was rather low, while real wages were rising – including for those at the lower end of income distribution – and the inflation rate was modest. At the same time, the IMF noted in the Staff Concluding Statement of June 2019 (IMF, 2019a):

"A fiscal expansion put in place in 2017-18—with tax reductions and an increase in both defense and nondefense spending—has helped bring annual growth to 2.9 percent in 2018. However, as the effects of this fiscal impulse fade over the next few years, growth will gravitate back toward potential (of around 1¾ percent). Risks are viewed to be broadly balanced around this forecast. A deepening of ongoing trade disputes or an abrupt reversal of the recent ebullient financial market conditions represent material risks to the U.S. economy (with concomitant negative outward spillovers). These risks are interconnected with trade policy uncertainty an important factor for both domestic and global financial conditions as well as for business investment decisions…

- …Life expectancy is declining and is well below that of other G7 countries (despite having been near the G7 median in the 1980s). Rising suicide rates and deaths linked to drug overdoses (CASE/DEATON, 2017) have contributed to this diminished longevity.
- The income of the median U.S. household, in inflation-adjusted terms, is only 2.2 percent higher today than it was at the end of the 1990s. This is despite real per capita GDP being 23 percent higher over the same period.
- The wealth and income distribution are increasingly polarized. The poorest 40 percent of households have a level of net wealth that is lower today than it was in 1983 (WOLFF, 2017) and a growing share of the population earn less than one-half of the median income (see ALICHI/MAISCAL/MUHAJ, 2017).
- The poverty rate remains close to the level that it was immediately before the financial crisis. According to the latest supplemental poverty measure, almost 45 million Americans are living in poverty.
- Socioeconomic mobility has steadily eroded. As just one indicator of declining mobility (see CHETTY ET AL., 2016), one-half of the current cohort of young adults earns less than their parents did at a similar age (40 years ago, only 10 percent of young adults were in such a position)."

This summary of the Trump Administration's policy results suggests that the US economy had achieved success in several economic policy fields but that social indicators were worsening and that the uncertainty related to Trump's trade policy also undermined economic dynamics. One should also be aware that the high deficits of the Trump Administration in 2017-2019 – an unusual development and rather risky fiscal policy during an economic upswing– implies an unsustainable debt-GDP ratio for the US in the medium and long term unless one assumes that deregulation measures and other supply-side interventions would raise the growth rate of potential output. President Trump had announced both during his presidential campaign and also after taking office in January 2017 that his economic policy would bring more than 3% economic growth for years (WELFENS, 2019b).

As regards the Trump Administration's response, there was, however, an emphasis on three counter-arguments and issues, respectively: As part of its economic policy, the US Administration had adopted broad measures for deregulation and other supply-side reforms which would raise the growth rate of potential output and that cuts of non-defense expenditures in the federal budget would help to stabilize the debt-GDP ratio rather soon; the US Staff Representative at the IMF stated in his answer to the IMF Article IV Mission Statement (IMF, 2019b; p. 2/annex):

"We recognize the long-term challenge of addressing our public debt and the Administration is approaching the issue on two fronts. First, our supply-side reforms will durably raise potential growth which will improve our debt-GDP dynamics. Second, the Administration's planned reduction in non-defense discretionary spending, combined with healthcare and welfare reforms, will help stabilize public debt levels over the medium term and return the primary balance to a modest surplus position by 2024."

Thus, there is the question of whether President Trump's economic policy decisions actually made a significant contribution - positive or negative - to the development of the US economy. To tackle this issue, certain evaluation methodologies can be used in which counterfactual outcomes are constructed. By comparing the actual and counterfactual outcome, the impact of an economic or political intervention can be measured. By applying the Synthetic Control Method (SCM) of ABADIE/GARDEAZABAL (2003) for the US GDP and employment data, BORN ET AL. (2019) show that there is little evidence for a significant "Trump effect" – positive or negative. However, the following analysis, with a broader focus on the US economic developments, including US output, employment, the current account and other variables, shows that for several key macroeconomic factors, significant findings for a specific Trump effect can be found.

The main motivation of this research paper is to measure the impact of the Trump Administration's economic policy using the novel Panel Data Approach (PDA) of HSIAO ET AL. (2012). The PDA stands out both for its flexibility and the simplicity of the computation and can therefore be applied to a large number of macroeconomic variables. Moreover, and in contrast to the SCM, the PDA allows to conduct inference analysis. As proposed by LI/BELL (2017) and adopted by CELEBI (2020), subsequently the Least Absolute Shrinkage and Selection Operator (LASSO) method with the Leave-One-Out (LOO) cross-validation is implemented in order to select control units for an adequate out-of-sample prediction of the counterfactual. This approach can be applied to the United States and the Trump presidential period, respectively. A synthetic "economic twin" of the US will be considered and then the out-of-sample forecast for the twin's economic development will be compared to the actual economic performance of the US under the Trump Administration.

The key results of the subsequent analysis are that the Trump Administration achieved a relatively favorable development of the unemployment rate and recorded also relatively high investment-GDP ratios. At the same time the US economic performance with respect to GDP development and the current account balance have been worse than one should expect in a standard US policy setting. The analysis leads to the conclusion that the Trump

Administration has few elements to support the claim of a clear economic success story to present – even before the Corona shock and the subsequent rather poor epidemic policy of the Trump Administration (BRETSCHGER/GRIEG/WELFENS/XIONG, 2020).

The remainder of the paper is organized as follows: In Section 2 the econometric methodology, namely the PDA of HSIAO ET AL. (2012) and the LASSO model selection method, is presented. Section 3 describes the data and discloses the modelling strategy. The empirical results for the US GDP, unemployment rate, gross fixed capial formation, exports, imports, balance of trade and current account are presented in Section 4. The final section presents economic policy conclusions and suggests areas of future research.

2. Methodology and Econometric Findings

In the following analysis, the research question is to find out how the US economy would have developed has the Trump Administration followed a standard historical pattern which is identified by looking at a synthetic twin country (group) for the US and the comparing forecast values for the doppelganger/twin country with the actual figures for the economic performance of the United States. This way one can identify the specific economic impact of the Trump Administration in 2017-2019. The approach presented does not allow, however, to consider the discounted economic welfare effect from future long run effects of the Trump Administration's economic policy. However, it is possible to make a comparison between policy goals publicly set by the Trump Administration and the actual performance of the US economy.

As regards the broad methodology of any treatment approach – as used here in a specific form – one may emphasize several points for relevant conclusions:

- There is a weak difference with respect to the T-effect (treatment effect/Trump effect) if the predicted and actual performance of the relevant economic variable are very close to each other. A similar conclusion is obtained if the significance of the treatment effect is rather weak (above the 10% significance threshold).
- Anticipation and time lags will play a role for certain variables: For example, gross fixed capital formation will react relatively quickly to the announcement of tax reform plans and the inauguration of the new President/relevant event. However, some rather slow variables, namely employment and the unemployment rate, respectively, will show a time lag in the reaction to new economic policy measures. Therefore, one should be careful with cut-off dates and the length of the forecast window, respectively – subsequently we consider Q1 2017 as the standard cut-off date, but for the unemployment rate and the trade balance/current account balance Q1 2018 is considered as an alternative cut-off date.

With these considerations the conclusions obtained from our analysis should be rather solid in terms of the general approach used here.

SCM, PDA and LASSO as Methodologies

A critical analysis of policy measures in country i is often complicated since the counterfactual performance is difficult to calculate – unless one has an adequate DSGE macro model and policymakers simply implement a largely simulated model scenario using this DSGE model. In reality, policymakers use all kinds of discretionary policy intervention so that reference to simulation exercises of an adequate DSGE model is not always possible. To assess the effects of major policy interventions and regime changes on output, employment, the current account and other variables one could, however, use impact evaluation methodologies such as the Difference-in-Differences approach or more advanced approaches which include the SCM or the PDA. The key idea of the SCM and the PDA is to generate a hypothetical country twin – actually a group of countries taken together to create a synthetic "doppelgänger" which has the relevant statistical traits of the country concerned in the analysis - here the US. The econometric analysis then allows to generate a counterfactual forecast of macroeconomic variables for the US and thus to quantify the differential performance (e.g., actual output versus hypothetical output of the synthetic twin) between the country analyzed and the synthetic twin country group which has not been exposed to the same idiosyncratic shock. This approach has already been used with respect to BREXIT and the UK, respectively (see, e.g., BORN ET AL., 2019; CELEBI, 2020), and allows to assess the differential effect on key macro variables in the context of a specific shock – such as the pro-BREXIT majority in the UK's referendum on continued EU membership. In a similar vein, one can apply this methodology to the United States under President Trump so that the Trump-related performance differentials in such fields as real output, current account position and employment can be assessed. Thus, one gets an idea of the specific economic costs/advantages of the Trump Administration in the period 2017-2019 or 2017-2020 if the latter year is to be included in the relevant period. The Corona shock, however, is so massive and unique that it is adequate to focus on the period from 2017-2019 which covers those years in which Trump's broad economic policy shifts and systemic reforms have had a strong impact on the US economy.

Using covariates, the SCM predicts a counterfactual by calculating a weighted combination of control groups, which minimizes the difference between predicted and actual data in the pre-treatment period (GARDEAZABAL/VEGA-BAYO, 2017). The calculation procedure in the PDA of HSIAO ET AL. (2012) is more straightforward and varies from the SCM regarding both the technical focus and the approach. The basic idea of the PDA is that there is a group of common factors, which are the main forces driving all panel outcomes such as real GDP. A factor approach would therefore be able to model the outcome of a unit. Given that these factors are unobservable, the PDA uses the outcome of the remaining units of a panel in lieu of the common factors. Instead of referring to covariates, the PDA uses a factor model to construct the counterfactual for the pre-treatment period, using only the outcome variable of a panel, whose coefficient is finally used to calculate the counterfactual output in the post-treatment period. An important advantage of this simple approach is the feasibility of significance tests, which is not provided by the SCM. In combination with the LASSO-LOO method, which delivers predictors in an out-of sample manner, the PDA provides a useful technique for finding a forecast for the doppelgänger whose performance can then be compared to the actual outcome of United States.

As regards the basic approach, let $\underset{\sim}{y}_t = (y_{1t}, y_{2t}, \ldots, y_{Nt})$ denote a vector of panel data across N countries at time t. The treatment effect for the ith country at time t is

$$\Delta_{it} = y_{it}^1 - y_{it}^0 \qquad (1)$$

where y_{it}^1 and y_{it}^0 represent the outcome of the ith country at time t under treatment and in the absence of treatment, respectively. Since y_{1t}^1 and y_{1t}^0 cannot be observed simultaneously, we can formulate as follows:

$$y_{it} = d_{it}\, y_{it}^1 + (1 - d_{it})\, y_{it}^0 \qquad (2)$$

where

$$d_{it} = \begin{cases} 1, & \text{if the ith country is under treatment at time t} \\ 0, & \text{otherwise} \end{cases} \quad (3)$$

Supposing that the treatment, i.e. the presidential inauguration of Donald Trump, occurs at time T_1, the vector of observed outcomes $\underset{\sim}{y}_t$ for the period up to T_1 can be noted as

$$\underset{\sim}{y}_t = \underset{\sim}{y}_t^0, \qquad \text{for } t = 1, \dots, T_1 \quad (4)$$

If the treatment solely has an impact on the first country, i.e. the US, the outcomes of other units of the panel are not affected by the treatment:

$$y_{1t} = \underset{\sim}{y}_{1t}^1, \qquad \text{for } t = T_1 + 1, \dots, T \quad (5)$$

$$y_{it} = y_{it}^0, \qquad \text{for } i = 2, \dots, N, \qquad \text{for } t = 1, \dots, T \quad (6)$$

Assuming that K common factors drive the outcomes of the panel, y_{it}^0 can be formulated as follows:

$$y_{it}^0 = \alpha_i + \underset{\sim}{b}_i' \underset{\sim}{f}_t + \varepsilon_{it} \text{ with } i = 1, \dots, N, \qquad \text{for } t = 1, \dots, T \quad (7)$$

where $\underset{\sim}{f}_t$ is the $K \times 1$ vector of (unobservable) common factors that vary over time, $\underset{\sim}{b}_i'$ is the $1 \times K$ vector of constants, which can vary across units i, α_i is the fixed unit-specific intercept and ε_{it} is the idiosyncratic error term with $E(\varepsilon_{it}) = 0$. This factor model can be stacked together in terms of the N units:

$$\underset{\sim}{y}_t^0 = \underset{\sim}{\alpha} + \mathbf{B}\underset{\sim}{f}_t + \underset{\sim}{\varepsilon}_t \quad \text{for } t = 1, \dots, T \quad (8)$$

where $\underset{\sim}{\alpha}$ contains the $N \times 1$ vector of individual intercepts, $\mathbf{B} = (\underset{\sim}{b}_1, \dots, \underset{\sim}{b}_N)'$ denotes the $N \times K$ factor loading matrix and $\underset{\sim}{\varepsilon}_t$ is the $N \times 1$ vector of error terms, which is assumed to be stationary and with $E(\underset{\sim}{\varepsilon}_t) = 0$, homoscedastic and that $E(\underset{\sim}{\varepsilon}_t \underset{\sim}{f}'_t) = 0$.

Equations (1) and (7) indicate that for the post-treatment period of the first country, which is the unit treated by the policy change, the outcome can be noted as follows:

$$y_{1t} = y_{1t}^1 = y_{1t}^0 + \Delta_{1t} = \alpha_1 + \underset{\sim}{b}_1' \underset{\sim}{f}_t + \varepsilon_{1t} + \Delta_{1t} \qquad \text{for } t = T_1 + 1, \dots, T \quad (9)$$

HSIAO ET AL (2012, p. 709) show that the counterfactual prediction of y_{1t}^0 in the pre-treatment period can be calculated by using $\underset{\sim}{\tilde{y}}_t = (y_{2t}, \dots, y_{Nt})'$ in lieu of $\underset{\sim}{f}_t$:

$$y_{1t}^0 = \bar{\alpha} + \underset{\sim}{\tilde{\alpha}}' \, \underset{\sim}{\tilde{y}}_t + \varepsilon_{1t}^* \quad (10)$$

where $\bar{\alpha}$ and $\underset{\sim}{\tilde{\alpha}}$ denote the constant and the vector of coefficients, respectively, and ε_{1t}^* is the error term. To construct the counterfactual outcome, y_{1t}^0 has to be regressed first on $\underset{\sim}{\tilde{y}}_t$ for the pre-treatment period ($t = 1, \dots, T_1$) using equation (10). Then, the obtained estimates for $\bar{\alpha}$ and $\tilde{\underset{\sim}{\alpha}}$ are utilized to calculate $\hat{y}_{1t}^0$ for the post-treatment period ($t = T_1 + 1, \dots, T$).

Regarding equation 1, the average treatment effect (ATE) can be calculated as follows:

$$\text{ATE} = \frac{1}{T - T_1} \sum_{i=T_1}^{T} y_{1t}^1 - \hat{y}_{1t}^0 = \frac{1}{T - T_1} \sum_{i=T_1}^{T} \hat{\Delta}_{1t} \tag{11}$$

If $\hat{\Delta}_{1t}$ is stationary, the significance of the ATE can be tested by applying a t-test. If this is not the case, and thus the predicted treatment effect is serially correlated, the inference of ATE can be performed by using an OLS model with just a constant as independent variable and the heteroskedastic-autocorrelation consistent (HAC) variance-covariance estimator proposed by NEWEY/WEST (1987):

$$\hat{\Delta}_{1t} = \alpha_0 + \hat{\varepsilon}_t \tag{12}$$

where the constant α_0 represents the ATE. Using HAC standard errors, the significance of the ATE can be tested. Furthermore, an AR(p) model can be conducted for $\hat{\Delta}_{1t}$:

$$\hat{\Delta}_{1t} = \beta_0 + \sum_{i=1}^{p} \beta_i \hat{\Delta}_{1(t-i)} + \hat{\varepsilon}_t \tag{13}$$

The constant β_0 of the AR(p) model is the short-run treatment effect (STE) and can be tested for significance by a t-test. If AR(p) is stationary $\left(\left|\sum_{i=1}^{p} \beta_i\right| < 1\right)$ and thus converges towards a steady state, the implied long-run effect (LTE) can be calculated as follows:

$$\text{LTE} = \frac{\beta_0}{1 - \sum_{i=1}^{p} \beta_i} \tag{14}$$

The significance of the LTE can be evaluated by conducting a Wald test.

Although HSIAO ET AL. (2012) suggest to use the (corrected) Akaike Information Criterion (AIC and AICC) or the Bayesian Information Criterion (BIC) in order to select the most relevant predictors, these model selection methods could force the researcher to make possibly crucial ex ante decisions, since OLS cannot be applied in the case of a larger number of countries N than the pre-treatment sample size T_1 (LI/BELL, 2017, p. 66). The LASSO method, however, which shrinks less significant coefficients to zero, provides a model selection method which allows N to be higher than the sample size leads to smaller out-of-sample predictive mean squared errors, smaller computational times and lower and robust numbers of selected regressors compared to the use of AIC, AICC and BIC (MEINSHAUSEN/YU, 2009; LI/BELL ,2017, p. 71).

Regarding equation (10) for the pre-treatment period, the LASSO method solves the following problem to obtain the estimates for $\bar{\alpha}$ and $\tilde{\underset{\sim}{\alpha}}$ (TIBSHIRANI, 2011, p. 273):

$$\min_{\bar{\alpha},\tilde{\underset{\sim}{a}}} \left\{ \sum_{t=1}^{T_1} \left(y_{1t}^0 - (\bar{\alpha} + \underset{\sim}{\tilde{a}}' \, \underset{\sim}{\tilde{y}}_t) \right)^2 + \lambda \sum_{j=1}^{N} |\tilde{a}_j| \right\}, \tag{15}$$

where $\tilde{a}_j$ is the jth element of the coefficient vector $\underset{\sim}{\tilde{a}}$ and λ is a tuning parameter. In equation (15), the first term is the OLS loss function, whereas the second term sanctions the coefficients' size. A higher parameter λ increases the penalty on coefficients $\tilde{a}_j$, which means that the LASSO procedure shrinks more non-zero and high coefficients $\tilde{a}_j$ towards zero in order to decrease the variance of the estimation. The flipside of this penalization is an increasing bias (LI/BELL, 2017, p. 70). In summary, the LASSO method provides a technique where the variance of the estimated coefficients $\left[Var(\hat{\underset{\sim}{\tilde{a}}})\right]$ and the bias of the estimated coefficients $\left[E(\hat{\underset{\sim}{\tilde{a}}}) - \underset{\sim}{\tilde{a}}\right]$ are considered as trade-offs.

The calibration of the tuning parameter λ is done by using cross-validation (CV) methods, where the out-of-sample accuracy of the model is tested using a discrete set $\Lambda_L = \{\lambda_1, \dots, \lambda_L\}$ (TIBSHIRANI, 2011, p. 278). As proposed by LI/BELL (2017, p. 70), for our analysis we use the leave-one-out (LOO) CV, where for each pre-treatment period $t = 1, \dots, T_1$ and for each element $\lambda_k (k = 1, \dots, L)$ of Λ_L , the coefficients $\bar{\alpha}$ and $\underset{\sim}{\tilde{a}}$ are estimated by solving the following problem:

$$\min_{\bar{\alpha},\tilde{\underset{\sim}{a}}} \left\{ \sum_{s=1, s\neq t}^{T_1} \left(y_{1s}^0 - (\bar{\alpha} + \underset{\sim}{\tilde{a}}' \, \underset{\sim}{\tilde{y}}_s) \right)^2 + \lambda_k \sum_{j=1}^{N} |\tilde{a}_j| \right\}. \tag{16}$$

As a result, a $T_1 \times L$ set of coefficients $\hat{\bar{\alpha}}_{-t,k}, \hat{\underset{\sim}{\tilde{a}}}_{-t,k}$ is estimated, which are the LOO (leave the t-th observation out) estimates of $\bar{\alpha}$ and $\underset{\sim}{\tilde{a}}$. To specify λ, the average squared error over all T_1 observations is calculated for each tuning parameter λ_k $(k = 1, \dots, L)$ by using the estimated coefficients $\hat{\bar{\alpha}}_{-t,k}$, $\hat{\underset{\sim}{\tilde{a}}}_{-t,k}$ of equation (16):

$$CV(\lambda_k) = \frac{1}{T_1} \sum_{t=1}^{T_1} \left(y_{1t}^0 - \left(\hat{\bar{\alpha}}_{-t,k} + \hat{\underset{\sim}{\tilde{a}}}'_{-t,k} \, \underset{\sim}{\tilde{y}}_t \right) \right)^2 \qquad \text{for } k = 1, \dots, L. \tag{17}$$

The tuning parameter λ_k, which minimizes $CV(\lambda_k)$ and thus leads to lower average squared errors, is used in equation (15).

3. Data and Modelling Strategy

As far as possible, the ‘donor’ countries’ economic characteristics should be close to those of the US. Thus, member countries of the Organisation for Economic Co-operation and Development (OECD) are taken as controls. The following macroeconomic time series of the OECD database are considered for the empirical analysis: GDP, unemployment rate, GCF, exports, imports, balance of trade and current account. Countries for which (quarterly) data are not available for a period of about ten years will be excluded. Table 1 gives a detailed overview of both time series and the available data.

First, by using the LASSO-LOO procedure, controls are obtained automatically that give the best out-of-sample prediction for the pre-treatment period. This step is used to mimic the pre-treatment period in order to subsequently predict the counterfactual output in the post-treatment period. Taking better account for changing interdependencies and behaviors over time, we use current data to adequately predict the current edge, namely for the period 2010Q1 to 2019Q4.1 Considering that the Trump Administration took office on 20 January 2017, 2017Q1 is set as the cut-off point T_1. Hence, the pre- and post-treatment period comprises 28 and 12 observations for each control, respectively. Since we use volume estimates, the ENGLE-GRANGER (1987) single-equation cointegration test is performed to avoid spurious regressions. In case the LASSO-LOO procedure selects controls as predictors whose linear combinations are not co-integrated, the procedure and subsequently the Engle-Granger test is iteratively repeated by removing that donor country from the donor pool which disrupts the cointegration relationship the most. After the LASSO procedure has selected controls with the best out-of-sample prediction and a statistical cointegration relationship, the counterfactual output is calculated for the post-treatment period. By dropping further controls from the donor pool, which disturb the cointegration the most, we calculate further LASSO-generated specifications – if possible – to enhance the robustness of the results.

To account for possible serially correlated treatment effects, an AR(p) model is fitted, where the BIC is used to specify the number of lags p. Since the residuals of the AR(p) estimation could still be serially correlated, Newey-West HAC variance-covariance estimators are used for inference.2

Table 1: Donor pool overview

Dependent variable USA	GDP*	Unemploy-ment rate (in %)	GCF**	Exports*	Imports*	Balance of trade	Current account balance (in % of GDP)
Australia	✓*	✓	✓**	✓*	✓*	✓**	✓
Austria	✓*	✓	✓**	✓*	✓*	✓**	✓
Belgium	✓*	✓	✓**	✓*	✓*	✓**	✓

[1] Due to the Corona shock, which affected all countries, we exclude data for 2020.

[2] Due to the limited number of observations for the post-treatment period, the BIC was used for the AR(p) model, which is stricter in selecting the number of variables to be included. As this may have left further serial correlations, the corrected variance-covariance matrix is used.

Canada	✓*	✓	✓**	✓*	✓*	✓**	✓
Chile	✓*	✓	✓***	✓*	✓*	✓**	✓
Colombia	✓*	✓	✓**	✓*	✓*	✓**	✓
Czech Republic	✓*	✓	✓**	✓*	✓*	✓**	✓
Denmark	✓*	✓	✓**	✓*	✓*	✓**	✓
Estonia	✓*	✓	✓**	✓*	✓*	✓**	✓
Finland	✓*	✓	✓**	✓*	✓*	✓**	✓
France	✓*	✓	✓**	✓*	✓*	✓**	✓
Germany	✓*	✓	✓**	✓*	✓*	✓**	✓
Greece	✓*	✓	✓**	✓*	✓*	✓**	✓
Hungary	✓*	✓	✓**	✓*	✓*	✓**	✓
Iceland	✓*	✓	-	✓*	✓*	-	✓
Ireland	✓*	✓	✓**	✓*	✓*	✓**	✓
Israel	✓*	✓	✓**	✓*	✓*	✓**	✓
Italy	✓*	✓	✓**	✓*	✓*	✓**	✓
Japan	✓*	✓	✓**	✓*	✓*	✓**	✓
Korea	✓*	✓	✓**	✓*	✓*	✓**	✓
Latvia	✓*	-	✓**	✓*	✓*	-	✓
Lithuania	✓*	-	✓**	✓*	✓*	✓**	✓
Luxembourg	✓*	✓	✓**	✓*	✓*	✓**	✓
Mexico	✓*	✓	-	✓*	✓*	-	✓
Netherlands	✓*	✓	✓**	✓*	✓*	✓**	✓
New Zealand	✓*	✓	✓**	✓*	✓*	✓**	✓
Norway	✓*	✓	✓**	✓*	✓*	✓**	✓
Poland	✓*	✓	✓**	✓*	✓*	-	✓
Portugal	✓*	✓	✓**	✓*	✓*	✓**	✓
Slovak Republic	✓*	✓	✓**	✓*	✓*	-	✓
Slovenia	✓*	✓	✓**	✓*	✓*	✓**	✓
Spain	✓*	✓	✓**	✓*	✓*	✓**	✓
Sweden	✓*	✓	✓**	✓*	✓*	✓**	✓
Switzerland	✓*	-	✓**	✓*	✓*	✓**	✓
Turkey	✓*	✓	-	✓*	✓*	✓**	✓

United Kingdom	✓*	✓	✓**	✓*	✓*	✓**	✓

* US dollars, volume estimates, fixed PPPs, annual levels, SA

** National currency, chained volume estimates, quarterly levels, SA

PPP: purchasing power parity; SA: seasonally adjusted

4. Results of the PDA LASSO-LOO Approach

4.1 Results for GDP

The donors of the first real GDP model specification, which are provided by the LASSO method and whose linear combination is cointegrated at the 10 percent level, are Luxembourg, Norway, Poland and Turkey, with $\bar{R}^2$ = 98.52% as the adjusted proportion of the variance explained by the donors. Results indicate that the actual and the counterfactual path diverge particularly in the first two years of the Trump Administration. It should be noted that the lower confidence band in Figure 1 bends downwards due to the economic downturn in Turkey in the second half of 2018. The ATE equals -74.18 billion US dollar (or 18.55 billion at a quarterly level) and is, according to the t-test with HAC standard errors, significant at the 5 percent level. The cumulative loss in terms of GDP since President Trump took office equals approximately 220 billion US dollars. Although the treatment effects are fitted to an AR(4) model, the STE and the LTE are not significant at any level.

In the second specification, where the LASSO procedure selects France and Lithuania in lieu of Turkey and Poland with $\bar{R}^2$ = 98.31%, the ATE is not significant at any level. The treatment effects are fitted also to an AR(4), where the LTE show no significant impact but the STE equals 63.32 billion US dollars, significant at the 5 percent level.

The Engle-Granger test shows that in the third and the fourth specifications the linear combinations are cointegrated at the 5 percent level. The donors in the third specification are Estonia, France, Luxembourg and Norway, whereas in the fourth specification the LASSO procedure selects Japan in place of Estonia. The ATE in the third specification is not significant, but the fitted AR(4) model indicates that the STE and LTE equals -34.5 and -22.2 billion US dollars, respectively, and are both significant at the 5 percent level. The figures in the fourth specification show that the ATE is significantly different from zero at the 1 percent level and equals -111.9 billion US dollars, whereas the cumulative loss corresponds to -335.7 billion US dollars. Here, the STE and LTE are not significantly different from zero at any level.

All in all, the estimates indicate a negative impact of the policies of President Trump. Nevertheless, regarding the amount of the loss, the estimated figures are not robust. Considering the significant ATE estimates in the first and fourth specifications calculated using industrialized countries, a cumulative loss of between 220 and 330 billion US dollars can be stated.

Table 2: Counterfactual prediction of US's real GDP (US Dollar, billions, 2015, annual level), first specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)

	Coefficient	Std.dev.	*T*
Constant	3188.90	1690.60	1.89
Luxembourg	18.33	20.51	2.89

Norway	4.30	6.83	2.68
Poland	0.02	2.18	1.98
Turkey	0.67	0.50	1.35
$\bar{R}^2$ = 0.9852;	Engle-Granger cointegration tau-stat. = -4.76; with p-value = 0.0680		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = -74.18	Std.dev. = 24.83	T = -2.99	p-value = 0.0123
Treatment fits to a stationary AR(4)-model:			
LTE = -57.75 (Wald-stat. = 0.0079; p-value = 0.9291)			
STE = -59.54 (T = -1.95; p-value = 0.1456)			
Cumulative treatment effect = -222.54			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 1: Actual and predicted real GDP of the US (in billions of US dollars, 2015, annual level), first specification

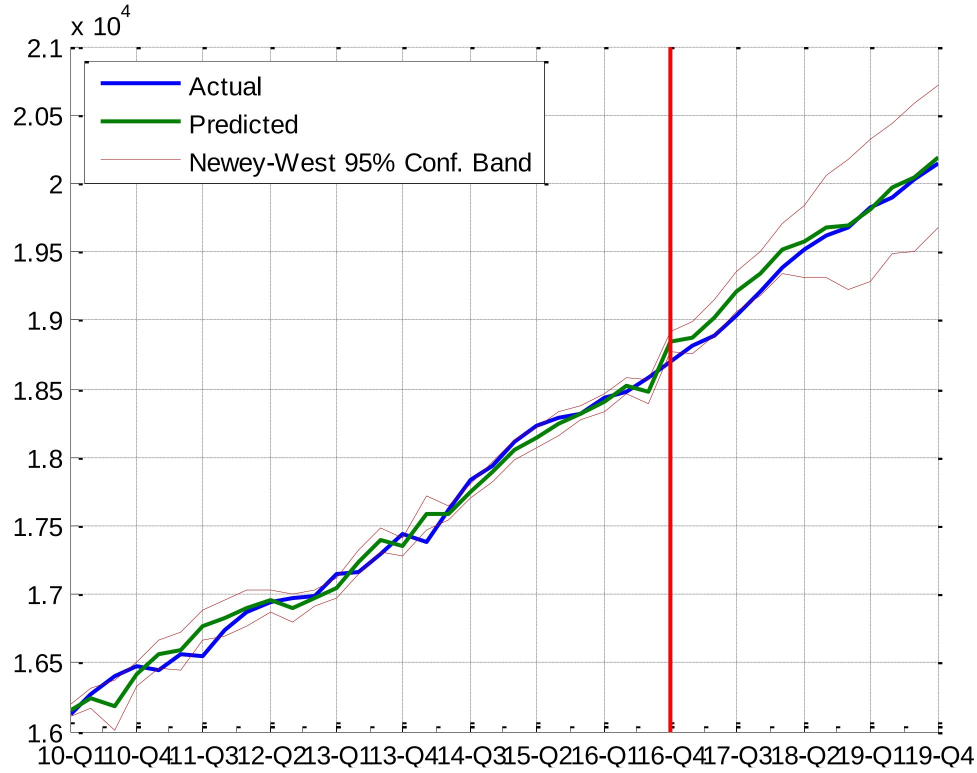


Table 3: Counterfactual prediction of US's real GDP (US dollar, billions, 2015, annual level), second specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	T

Constant	103.32	4383.8	0.023569
France	1.2501	2.1539	0.58039
Lithuania	36.252	21.265	1.7048
Luxembourg	89.618	17.621	5.0859
Norway	20.181	7.1365	2.8278

$\bar{R}^2$ = 0.9831 Engle-Granger cointegration tau-stat. = -4.79; with p-value = 0.0639

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)

Constant OLS model with HAC standard errors:			
ATE = 19.10	Std.dev. = 30.50	T = 0.63	p-value = 0.5440

Treatment fits to a stationary AR(4)-model:
LTE = 54.02 (Wald-stat. = 0.598246; p-value = 0.4392)
STE = 63.32 (T = 4.9689; p-value = 0.0157)
Cumulative treatment effect = 57.29

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 2: Actual and predicted real GDP of the US (in billions of US dollars, 2015, annual level), second specification

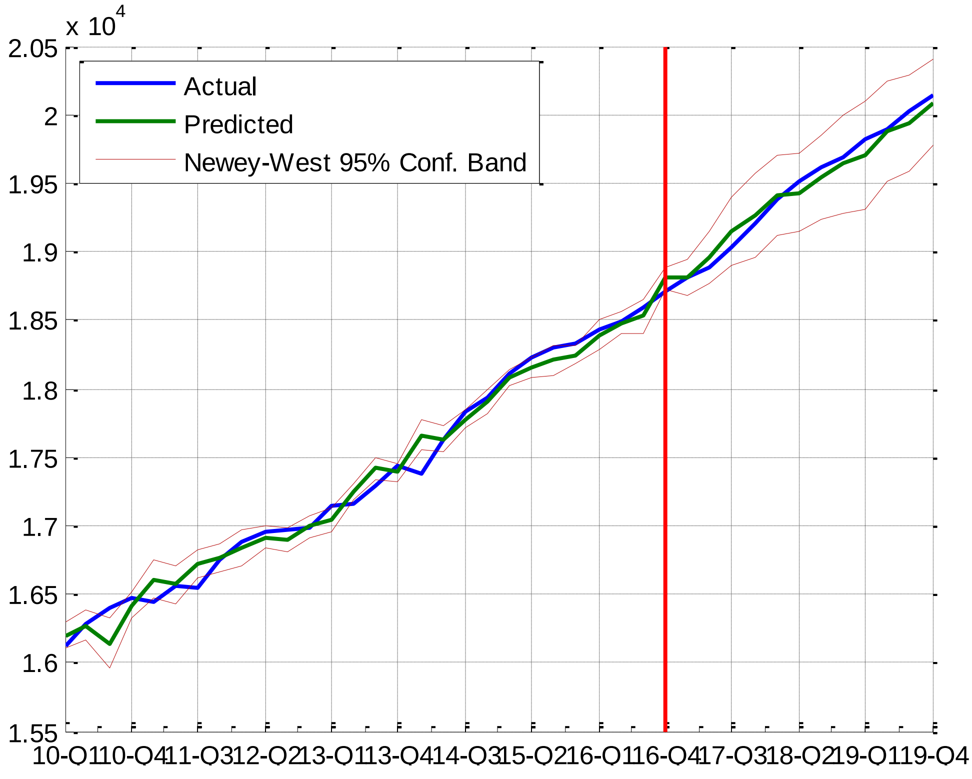


Table 4: Counterfactual prediction of US real GDP (US Dollar, billions, 2015, annual level), third specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	1092.7	5571.2	0.19613
Estonia	86.721	60.024	1.4448
France	0.20773	2.9913	0.069444
Luxembourg	97.128	19.301	5.0323
Norway	23.599	6.477	3.6434
$\bar{R}^2$ = 0.9826	Engle-Granger cointegration tau-stat. = -5.50; with p-value = 0.0182		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = -39.63	Std.dev. = 23.67	*T* = -1.67	p-value = 0.1222
Treatment fits to a stationary AR(4)-model:			
LTE = -22.24 (Wald-stat. = 5.34352; p-value = 0.0208)			
STE = -34.51 (*T* = -4.1944; p-value = 0.0247)			
Cumulative treatment effect = -118.88			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 3: Actual and predicted real GDP of the US (in billions of US dollars, 2015, annual level), third specification

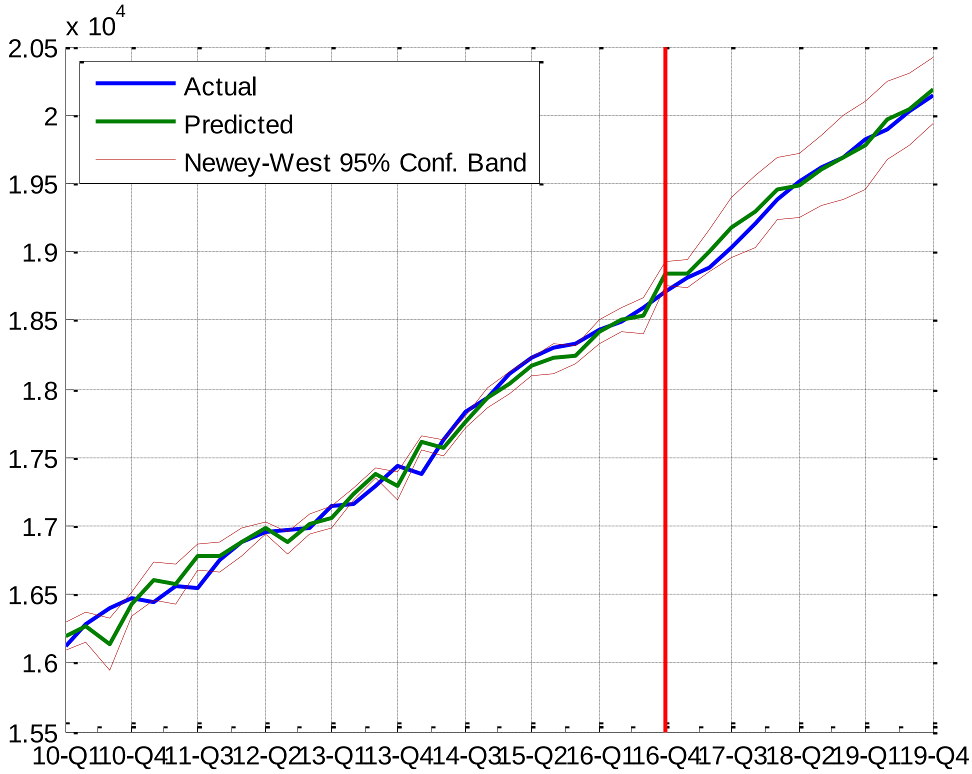


Table 5: Counterfactual prediction of US real GDP (US Dollar, billions, 2015, annual level), fourth specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)

	Coefficient	Std.dev.	*T*
Constant	-7278.3	2631.9	-2.7654
France	3.6346	1.5047	2.4155
Japan	0.62467	0.48564	1.2863
Luxembourg	80.209	18.579	4.3172
Norway	24.312	6.437	3.7769

$\bar{R}^2 = 0.9823$ Engle-Granger cointegration tau-stat. = -5.28; with p-value = 0.0274

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)

Constant OLS model with HAC standard errors:

ATE = -111.88 Std.dev. = 31.10 *T* = -3.60 p-value = 0.0042

Treatment fits to a stationary AR(3)-model:

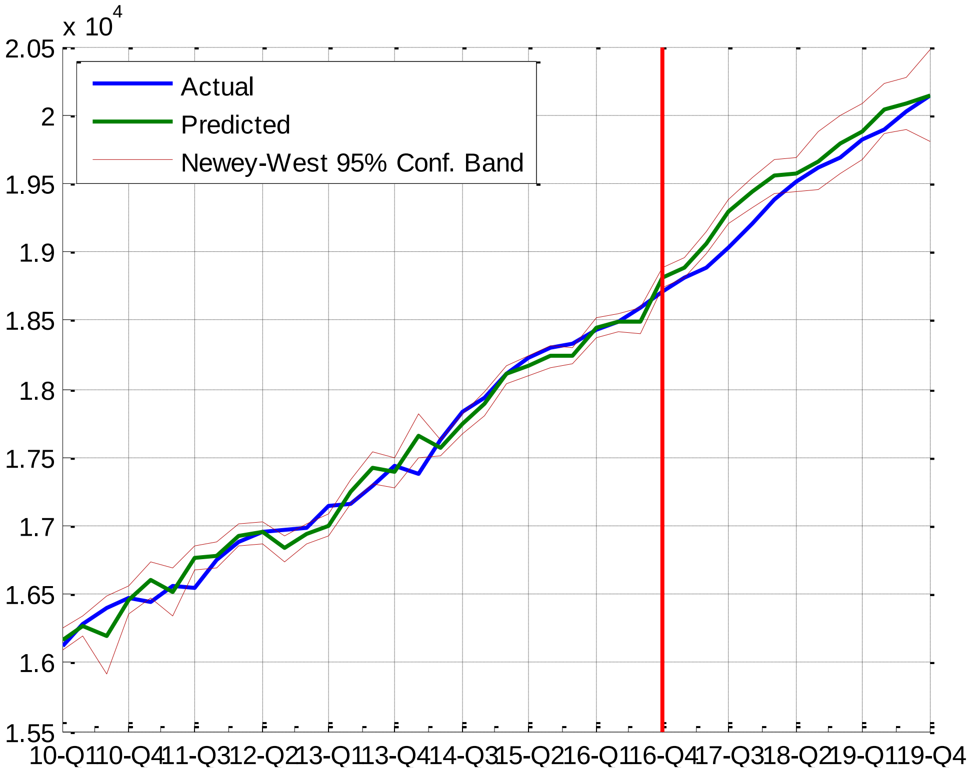
LTE = -71.39 (Wald-stat. = 1.83125; p-value = 0.1760)

STE = -42.13 (*T* = -0.8614; p-value = 0.4284)

Cumulative treatment effect = -335.65

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 4: Actual and predicted real GDP of the US (in billions of US dollars, 2015, annual level), fourth specification



4.2 Results for Unemployment

As regards the unemployment rate, the LASSO procedure provides only one specification, where the linear combination of the donors, namely France, Japan and the UK, is cointegrated with a p-value of 6.0%. The adjusted proportion of the variance explained by these three donors is 99.3% for the pre-Trump period. The calculated treatment effects, which have no serial correlation, are not significantly different from zero at the 10 percent level. This means that the relatively favorable development of the unemployment rate has also been observed in other (developed) countries and is probably due to the course of the world economy – and not due to President Trump's economic policies.

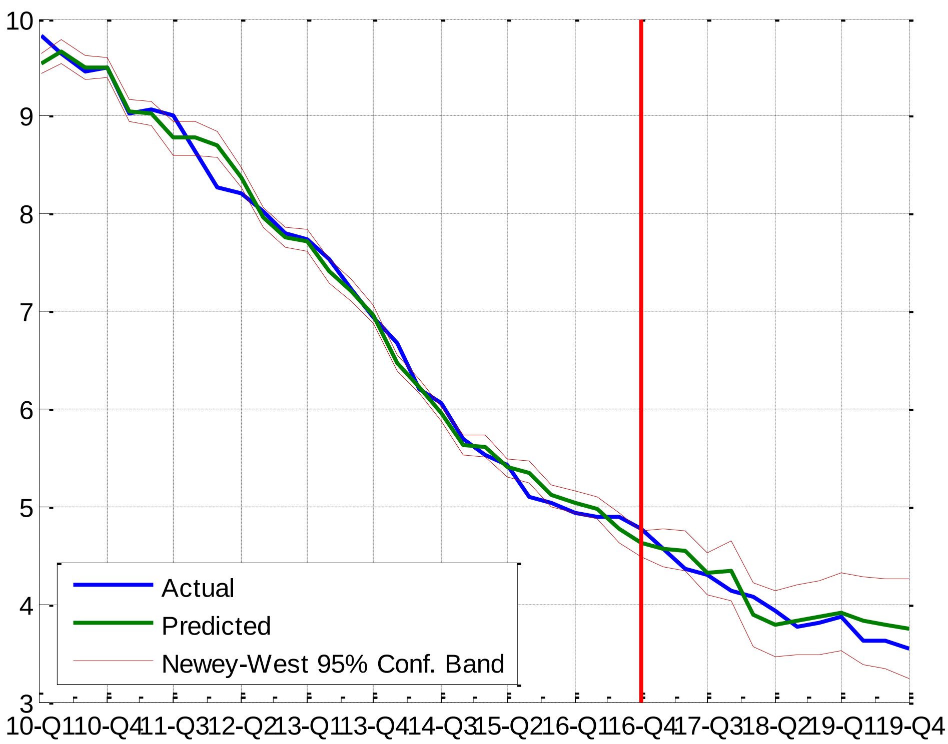
Table 6: Counterfactual prediction of US unemployment rate (in %)

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	1.8329	1.3894	1.3192
France	-0.3975	0.11256	-3.5315
Japan	1.6244	0.14272	11.382
UK	0.40749	0.055938	7.2847
$\bar{R}^2 = 0.9926$	Engle-Granger cointegration tau-stat. = -4.42; with p-value = 0.0596		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = -0.0719	Std.dev. = 0.0412	*T* = -1.7453	p-value = 0.1088
No AR(*p*) fit			

ATE = Average treatment effect

Figure 5: Actual and predicted unemployment rate of the US (in %)



Here, one should here that the treatment effect is only weakly significant – not within a 10 percent range if we take the cut-off date 2017Q1. However, if one moves the cut-off date to 2018Q1 the picture looks more favorable for the Trump Administration, which can be seen in the results presented in Table 7 and 8 and on Figure 6 and 7. Given the fact that the labor market reacts to policy interventions with some delays, one may argue that 2018Q1 is an adequate starting point for the treatment period (reflecting Trump's policy intervention). However, the significance is still rather weak, namely 9.5 percent.

Table 7: Counterfactual prediction of US unemployment rate (in %), first specification with T_1=2018Q1

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2017Q4)

	Coefficient	Std.dev.	*T*
Constant	-3.7534	0.4603	-8.154
Colombia	0.3205	0.0685	4.6824
Iceland	0.2004	0.0855	2.3447
Japan	0.9947	0.2190	4.5416
UK	0.3906	0.0582	6.7077
$\bar{R}^2$ = 0.9947	Engle-Granger cointegration tau-stat. = -4.83; with p-value = 0.0540		

Panel B: Treatment effects in the Trump period (2018Q1 – 2019Q4)

Constant OLS model with HAC standard errors:			
ATE = -0.2423	Std.dev. = 0.1257	*T* = -1.9277	p-value = 0.0952
Treatment fits to a stationary AR(2)-model:			
LTE = -1.0418(Wald-stat. = 40.46; p-value = 0.0000)			
STE = -0.1596 (*T* = -3.5482; p-value = 0.0381)			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 6: Actual and predicted unemployment rate of the US (in %), first specification with cut-off T_1=2018Q1

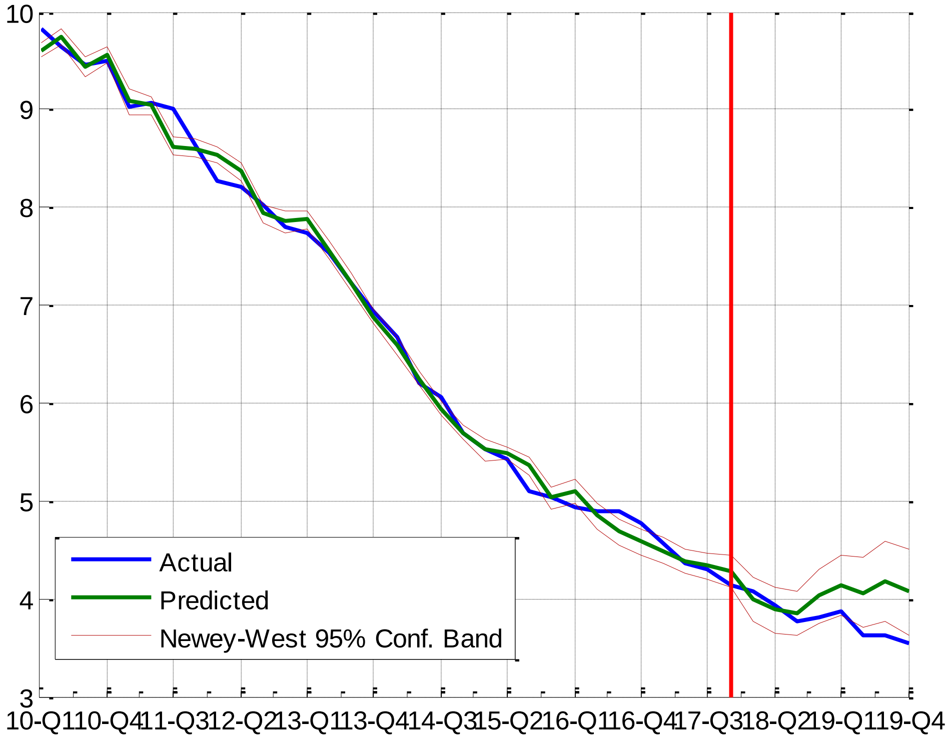


Table 8: Counterfactual prediction of US unemployment rate (in %), second specification with T_1=2018Q1

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2017Q4)

	Coefficient	Std.dev.	*T*
Constant	1.7210	0.9440	1.8230
Austria	-0.0376	0.1447	-0.2601
Finland	-0.4168	0.1219	-3.4201
Ireland	0.0208	0.0300	0.6932
Japan	2.2219	0.1374	16.1750

$\bar{R}^2$ = 0.9920 Engle-Granger cointegration tau-stat. = -5.50; with p-value = 0.0150

Panel B: Treatment effects in the Trump period (2018Q1 – 2019Q4)

Constant OLS model with HAC standard errors:

ATE = -0.2421 Std.dev. = 0.1201 *T* = -2.0163 p-value = 0.0836

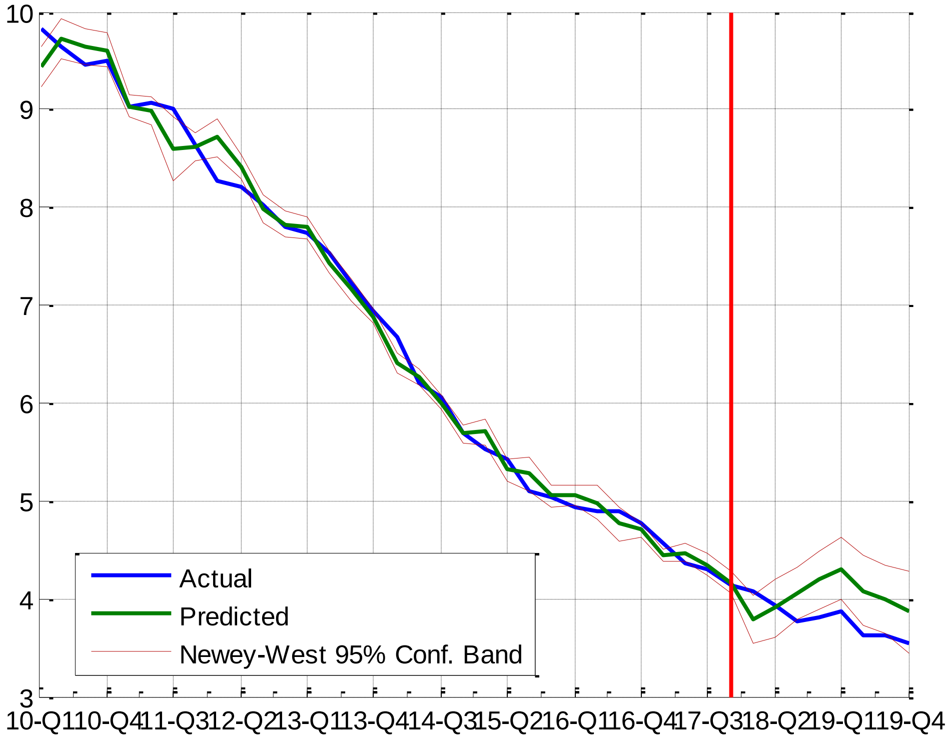
Treatment fits to a stationary AR(2)-model:

LTE = -0.367455 (Wald-stat. = 43.50; p-value = 0.0000)

STE = -0.2203 (*T* = -8.204; p-value = 0.0038)

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 7: Actual and predicted unemployment rate of the US (in %), second specification with cut-off T_1=2018Q1



4.3 Results for GCF

Using GCF panel data, the LASSO-LOO procedure provides four specifications, where the adjusted R-squared ranges between 97.86% and 97.08%. In the first three specifications, the Engle-Granger test indicates the presence of a cointegration relationship at the 5 percent significance level, and in the fourth specification at the 1 percent level. The predictors in the first estimate are Italy, Japan and New Zealand and result an ATE of 18.7 billion US dollars, which is significant at the 10 percent level. The cumulative treatment effect equals 224.4 billion US dollars. The treatment effects are serially correlated and thus are fitted using a (stationary) AR(1) model. Here, the LTE is 32.4 billion US dollars and is significantly different from zero at the one percent level.

In the second specification, Japan is not included as predictor, but Lithuania, Norway and Sweden are added by the LASSO procedure. The ATE is 27.4 billion US dollars and is statistically significant at the 5 percent level. The cumulated treatment effect equals 328.9 billion US dollars. Due to serially correlated treatment effects, a (stationary) AR(1) is fitted. The STE and the LTE are 13.6 and 44.3 billion US dollars, respectively, and are statistically significant at the 5 and the 1 percent level, respectively.

While the third estimate shows no significant treatment effects, the fourth specification, for which the Czech Republic, Denmark, Italy, Lithuania and New Zealand are the predictors, has similar results to the first estimate. The ATE and the cumulative treatment effect is again at 18.7 billion and 224 billion US dollars, but is now statistically significant at the 5 percent level. The treatment effects are fitted to an (stationary) AR(1) model, where the LTE equals 25 billion US dollars and is significantly different from zero at the 1 percent level.

In summary, the results indicate that the quarterly average impact of Trump's economic policies have been between 19 and 27 billion US dollars and the cumulative treatment effect of about 225 to 330 billion US dollars. Furthermore, a look at Figures 8, 9, 10 and 11 explain why the LTE calculations are significantly different from zero: From the second half of 2018, the predicted and actual GCF have started to drift apart.

The effects of President Trump's tax reform could not only be channeled via the reduction of the corporate tax rate – falling from 35% to 21% -, but the Trump Administration's incentives for firms to repatriate profits of foreign subsidiaries abroad should also be considered. US multinationals could bring home some $4 trillion of foreign profits and this would bring about a higher stock market index as management in many firms quoted on the stock market used repatriated profits to invest in buy-back stock activities. Hence Tobin's Q – the relative price of existing and new real capital – is raised, which in turn gives an incentive for higher private investment.

Table 9: Counterfactual prediction of US real GCF (US Dollar, billions, 2012, quarterly level), first specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	19.535	118.1	0.16542
Italy	-1.4554	0.52925	-2.75
Japan	0.022737	0.0051093	4.4501
New Zealand	22.296	5.782	3.8562
$\bar{R}^2 = 0.9708$	Engle-Granger cointegration tau-stat. = -4.89; with p-value = 0.0246		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = 18.70	Std.dev. = 9.68	*T* = 1.93	p-value = 0.0796
Treatment fits to a stationary AR(1)-model:			
LTE = 32.39 (Wald-stat. = 13.4893; p-value = 0.0002)			
STE = 10.16 (*T* = 1.3949; p-value = 0.1965)			
Cumulative treatment effect = 224.35			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 8: Actual and predicted real GCF of the US (in billions of US dollars, 2012, quarterly level), first specification

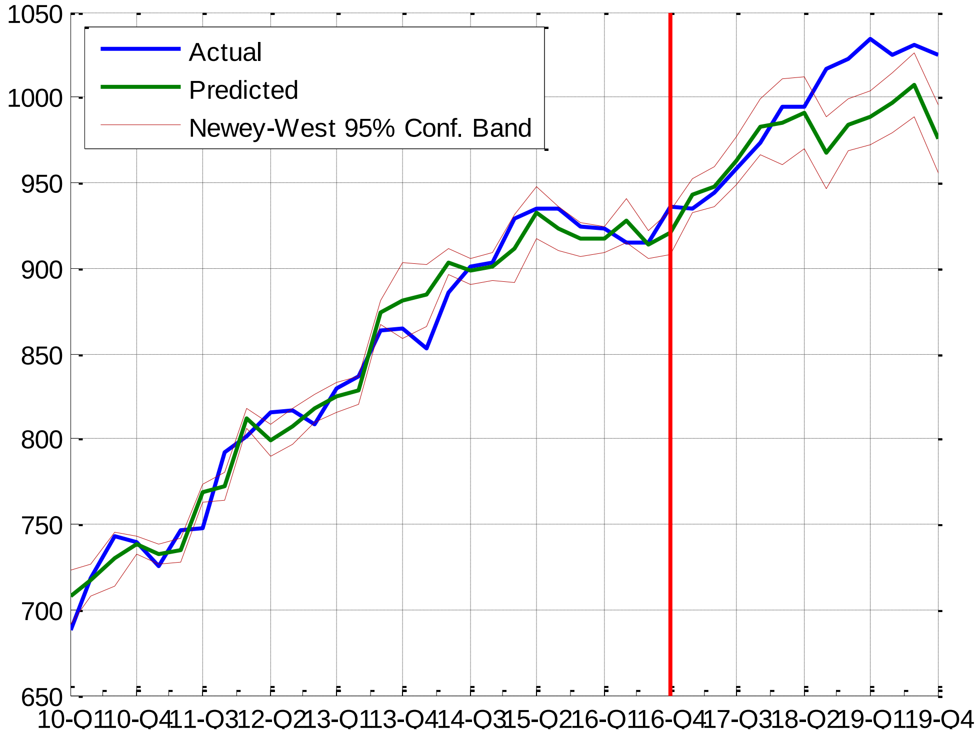


Table 10: Counterfactual prediction of US real GCF (US Dollar, billions, 2012, quarterly level), second specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	517.6	95.979	5.3928
Italy	-4.2007	0.63695	-6.5949
Lithuania	28.242	21.072	1.3403
New Zealand	18.914	5.7554	3.2863
Norway	0.25396	0.31283	0.81183
Sweden	1.1719	0.33639	3.4838
$\bar{R}^2 = 0.9773$	Engle-Granger cointegration tau-stat. = -5.77; with p-value = 0.0239		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = 27.41	Std.dev. = 11.41	*T* = 2.40	p-value = 0.0351
Treatment fits to a stationary AR(1)-model:			
LTE = 44.25 (Wald-stat. = 104.72; p-value = 0.0000)			
STE = 13.56 (*T* = 2.6793; p-value = 0.0252)			
Cumulative treatment effect = 328.90			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 9: Actual and predicted real GCF of the US (in billions of US dollars, 2012, quarterly level), second specification

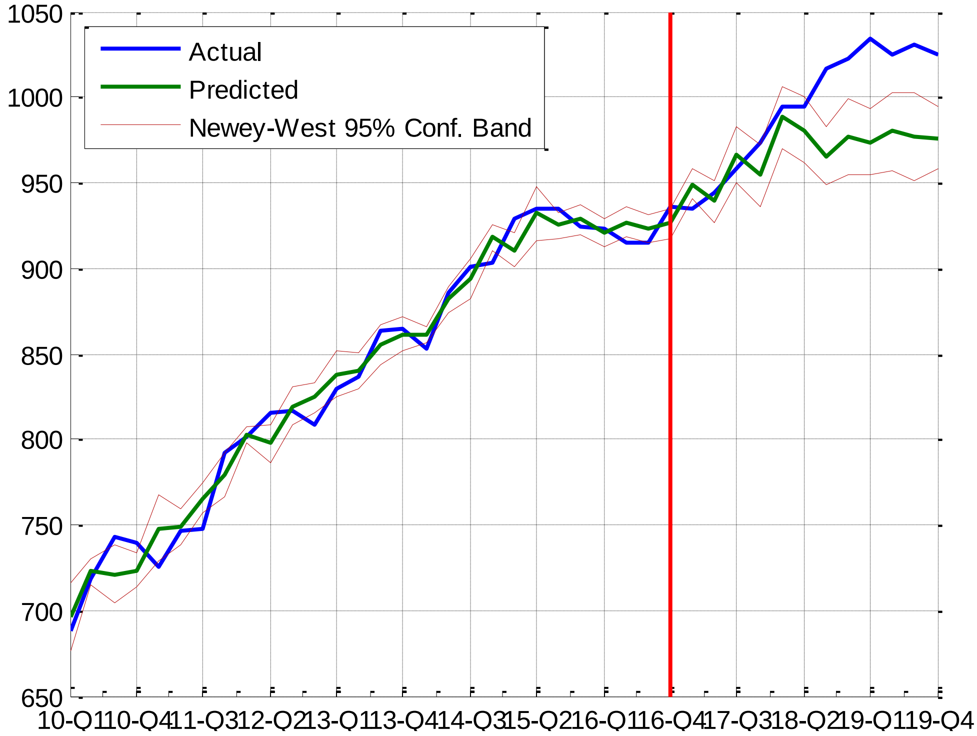


Table 11: Counterfactual prediction of US real GCF (US Dollar, billions, 2012, quarterly level), third specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	320.08	130.02	2.4618
Czech Republic	0.64266	0.23637	2.7189
Denmark	1.126	0.82662	1.3622
France	1.3458	1.1517	1.1685
Italy	-3.917	0.62627	-6.2545
Lithuania	21.496	22.688	0.94749
New Zealand	19.647	6.3445	3.0967
Norway	0.40121	0.34843	1.1515
$\bar{R}^2 = 0.9786$	Engle-Granger cointegration tau-stat. = -6.63; with p-value = 0.0208		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = 3.34	Std.dev. = 4.67	*T* = 0.71	p-value = 0.4896

Cumulative treatment effect = 40.03	

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 10: Actual and predicted real GCF of the US (in billions of US dollars, 2012, quarterly level), third specification

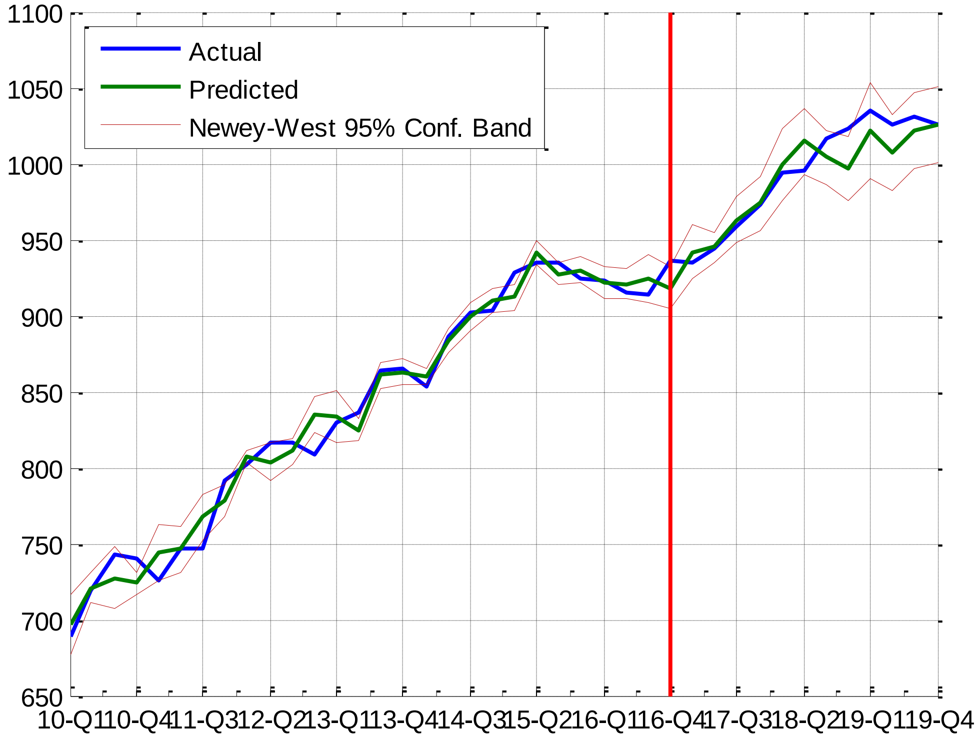


Table 12: Counterfactual prediction of US real GCF (US Dollar, millions, 2012), fourth specification

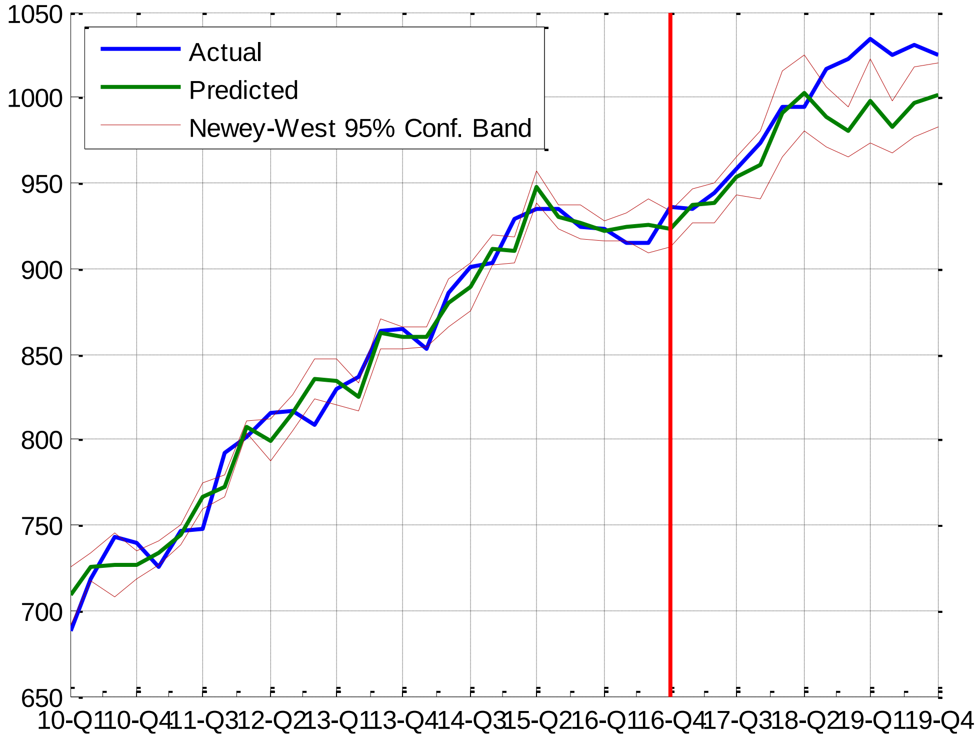
Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	522.03	69.654	7.4946
Czech Republic	0.53351	0.22197	2.4035
Denmark	1.3123	0.80224	1.6358
Italy	-4.0977	0.60599	-6.7621
Lithuania	36.954	21.642	1.7075
New Zealand	23.606	6.0484	3.9028
$\bar{R}^2$ = 0.9773	Engle-Granger cointegration tau-stat. = -6.82; with p-value = 0.0039		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = 18.74	Std.dev. = 7.41	*T* = 2.53	p-value = 0.0279

Treatment fits to a stationary AR(1)-model:
LTE = 24.97 (Wald-stat. = 18.66; p-value = 0.0000)
STE = 8.66 (T = 1.5188; p-value = 0.1631)
Cumulative treatment effect = 224.87

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 11: Actual and predicted real GCF of the US (in billions of US dollars, 2012, quarterly level), fourth specification



4.4 Results for Exports

The predictors of the first model specification for the US real exports provided by the LASSO method are Estonia, France, Luxembourg and Turkey, whereas the linear combination is cointegrated at the 10 percent level. In the second specification, the LASSO procedure picks Germany in lieu of France, where the linear combination is again cointegrated at the 10 percent level. The adjusted proportion of the variance explained by the first two model specifications is about 97.4%. In the third specification, the LASSO procedure replaces Germany with Chile, which improves the adjusted R-squared (97.58%) and the cointegration relationship (p-value=0.0313).

All three specifications for US real exports show similar patterns. None of the estimated values for the ATE and the STE are statistically significant at any level. However, the estimated values for the LTE, which range between about -12.9 and -14.3 billion US dollars, are significant for all specifications at the 1 percent level. Looking at Figures 12, 13 and 14, the reason for the insignificant ATE and highly significant LTE is apparent: until the second half of 2018, US exports have been higher than the “doppelganger”, but from 2019 US exports have performed worse than predicted.

Table 13: Counterfactual prediction of US real exports (US Dollar, billions, 2015, annual level), first specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)

	Coefficient	Std.dev.	*T*
Constant	1005.3	169.53	5.9299
Estonia	18.511	3.9781	4.6533
France	-0.16629	0.48398	-0.34359
Luxembourg	3.6812	1.1644	3.1615
Turkey	0.73227	0.22853	3.2043
$\bar{R}^2 = 0.9738$	Engle-Granger cointegration tau-stat. = -4.79; with p-value = 0.0648		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)

Constant OLS model with HAC standard errors:			
ATE = -7.47	Std.dev. = 16.91	*T* = -0.44	p-value = 0.6672
Treatment fits to a stationary AR(1)-model:			
LTE = -13.99 (Wald-stat. = 27.04; p-value = 0.0000)			
STE = -3.69 (*T* = -0.3493; p-value = 0.7349)			
Cumulative treatment effect = -22.42			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 12: Actual and predicted real exports of the US (in billions of US dollars, 2015, annual level), first specification

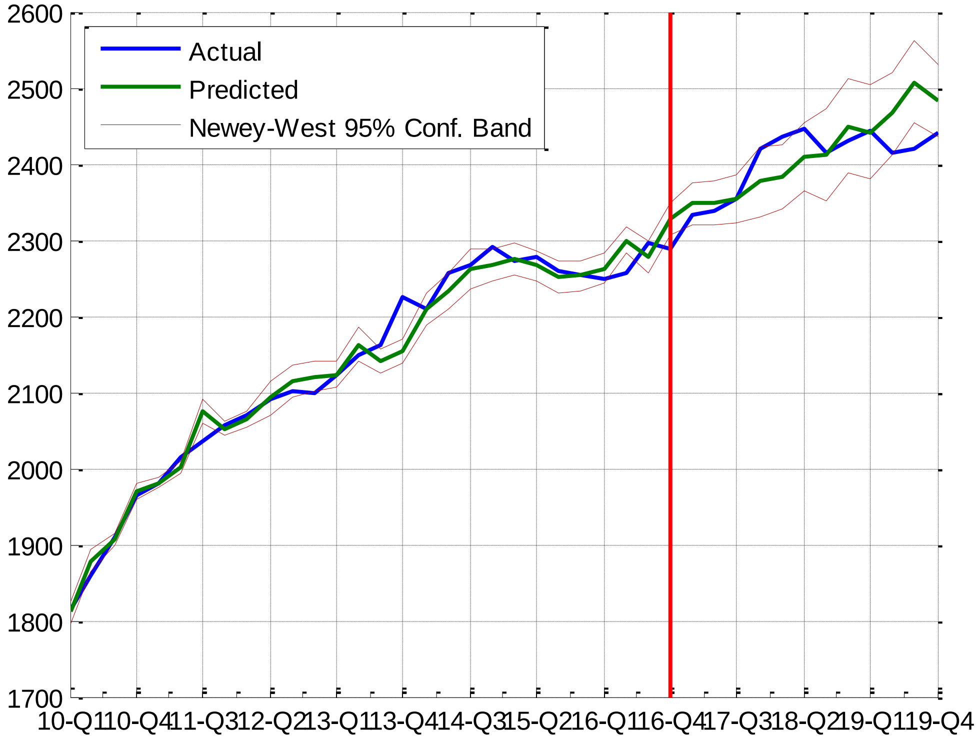


Table 14: Counterfactual prediction of US real exports (US Dollar, billions, 2015, annual level), second specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)

	Coefficient	Std.dev.	*T*
Constant	1006.9	110.43	9.1174
Estonia	19.413	4.3536	4.4591
Germany	-0.10581	0.18375	-0.57582
Luxembourg	3.9213	1.1795	3.3245
Turkey	0.72005	0.2166	3.3243

$\bar{R}^2$ = 0.9740 Engle-Granger cointegration tau-stat. = -4.90; with p-value = 0.0537

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)

Constant OLS model with HAC standard errors:

ATE = -5.84 Std.dev. = 17.69 *T* = -0.33 p-value = 0.7474

Treatment fits to a stationary AR(1)-model:

LTE = -14.28 (Wald-stat. = 27.04; p-value = 0.0000)

STE = -3.65 (*T* = -0.3398; p-value = 0.7418)

Cumulative treatment effect = -17.53

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 13: Actual and predicted real exports of the US (in billions of US dollars, 2015, annual level), second specification

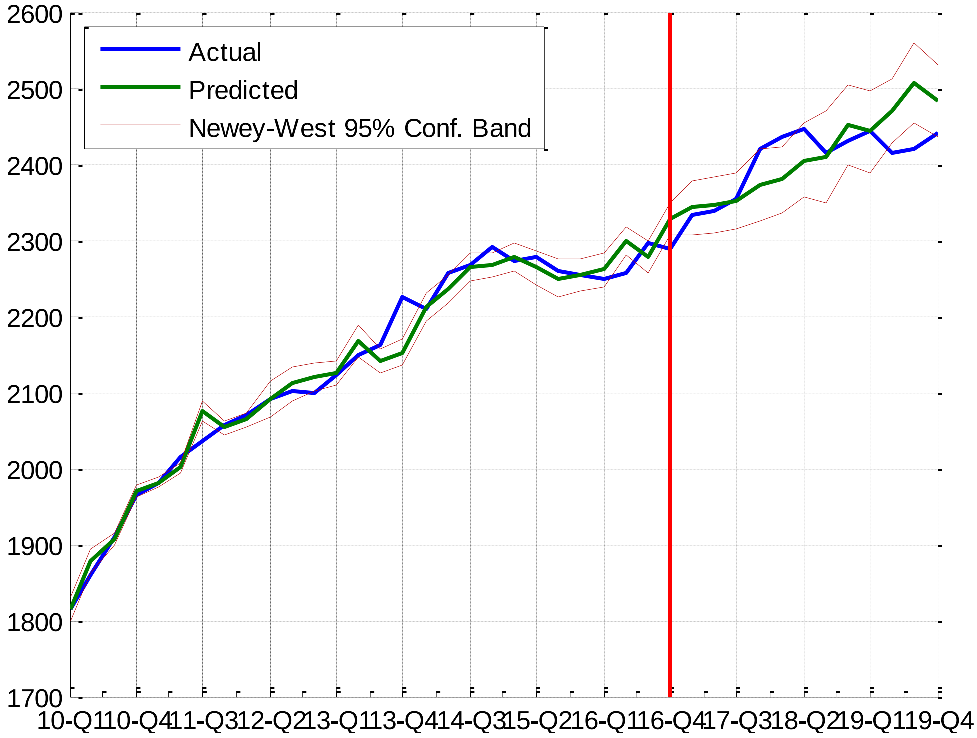


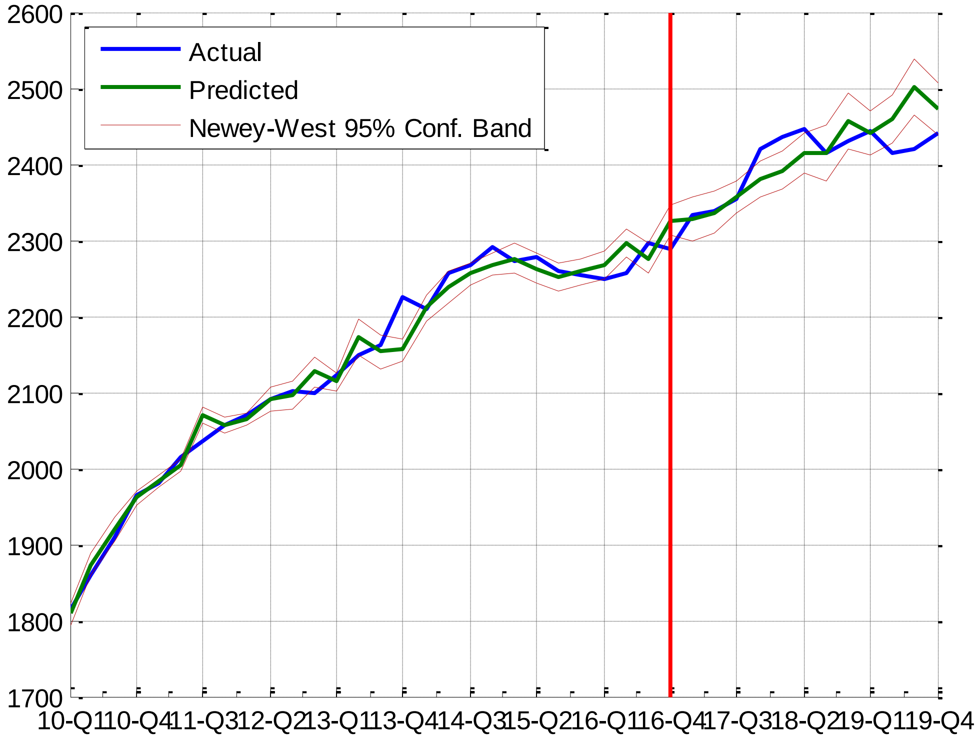
Table 15: Counterfactual prediction of US real exports (US Dollar, billions, 2015, annual level), third specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	743.45	152.19	4.8851
Chile	2.3183	1.6341	1.4188
Estonia	15.432	3.4337	4.4944
Luxembourg	3.4724	0.60346	5.7542
Turkey	0.66183	0.21048	3.1444
$\bar{R}^2 = 0.9758$	Engle-Granger cointegration tau-stat. = -5.20; with p-value = 0.0313		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = -5.19	Std.dev. = 14.72	*T* = -0.35	p-value = 0.7308
Treatment fits to a stationary AR(1)-model:			
LTE = -12.87 (Wald-stat. = 18.69; p-value = 0.0000)			
STE = -4.40 (*T* = -0.4735; p-value = 0.6471)			
Cumulative treatment effect = -15.58			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 14: Actual and predicted real exports of the US (in billions of US dollars, 2015, annual level), third specification



4.5 Results for Imports

Using the real imports panel data, we estimate four model specifications. In all specifications, the linear combination is cointegrated at the 5 percent level, whereas the adjusted R-squared equals about 99%. In the first specification, the LASSO procedure selects the Czech Republic, France and Mexico as predictors, whereas in the second specification the LASSO method selects Sweden in lieu of France. The ATE in the first two specifications equals -25.1 and -28.8 billion US dollars, respectively, and both are statistically significant at the 1 percent level. The cumulated loss for the whole period of the Trump administration is about 75 and 87 billion US dollars, respectively.

In the third specification, Sweden is dropped as a predictor and is replaced via the LASSO method with Austria and New Zealand. The ATE equals -49.1 billion US dollars and is again significantly different from zero at the 1 percent level. The cumulative loss in this specification is about 147 billion US dollars. In the fourth specification Canada is selected as a further predictor in lieu of Austria. The ATE and the cumulative loss is -19.1 and -57.4 billion US dollars, respectively, and significantly different from zero at the 5 percent level.

The results show that imports have been dampened during the Trump Administration. Apart from the third specification, the cumulative amount of loss lies in similar ranges, namely about 55 and 85 billion US dollars.

Table 16: Counterfactual prediction of US real imports (US Dollar, billions, 2015, annual level), first specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	456.68	98.697	4.6271
Czech Republic	1.8197	1.0044	1.8117
France	0.76704	0.47645	1.6099
Mexico	1.4663	0.27666	5.2999
$\bar{R}^2 = 0.9885$	Engle-Granger cointegration tau-stat. = -4.88; with p-value = 0.0253		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = -25.06	Std.dev. = 5.49	*T* = -4.56	p-value = 0.0008
Cumulative treatment effect = -75.18			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 15: Actual and predicted real imports of the US (in billions of US dollars, 2015, annual level), first specification

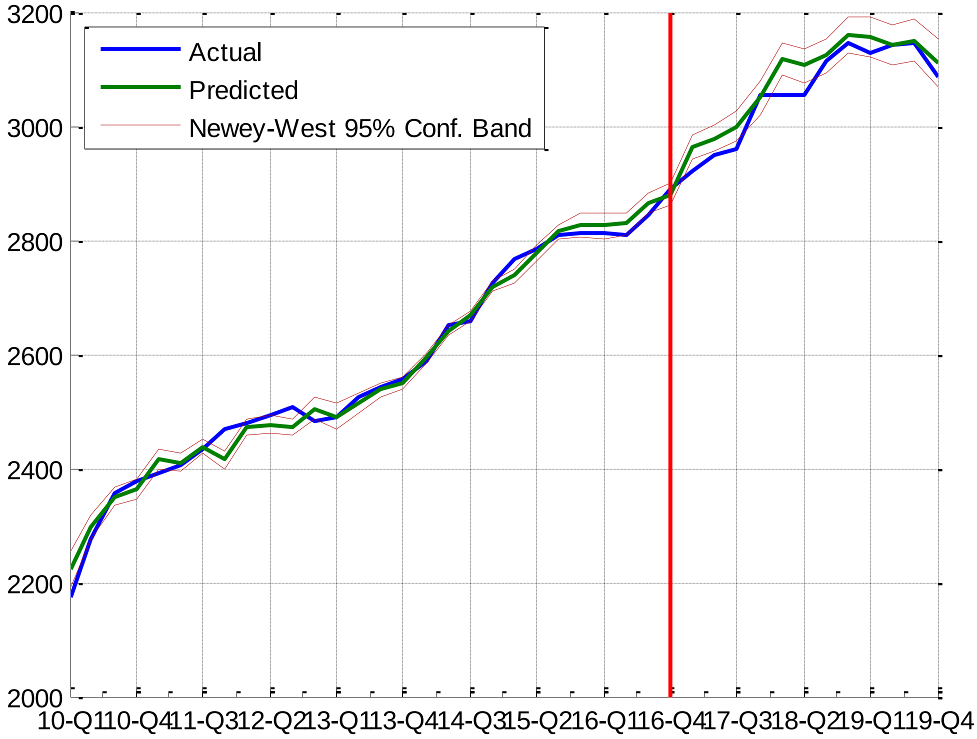


Table 17: Counterfactual prediction of US real imports (US Dollar, billions, 2015, annual level), second specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	496.41	73.397	6.7633
Czech Republic	1.7619	0.97976	1.7982
Mexico	1.5115	0.2573	5.8743
Sweden	3.0448	1.7375	1.7524
$\bar{R}^2 = 0.9887$	Engle-Granger cointegration tau-stat. = -4.88; with p-value = 0.0254		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = -28.83	Std.dev. = 6.69	*T* = -4.31	p-value = 0.0012
Cumulative treatment effect = -86.49			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 16: Actual and predicted real imports of the US (in billions of US dollars, 2015, annual level), second specification

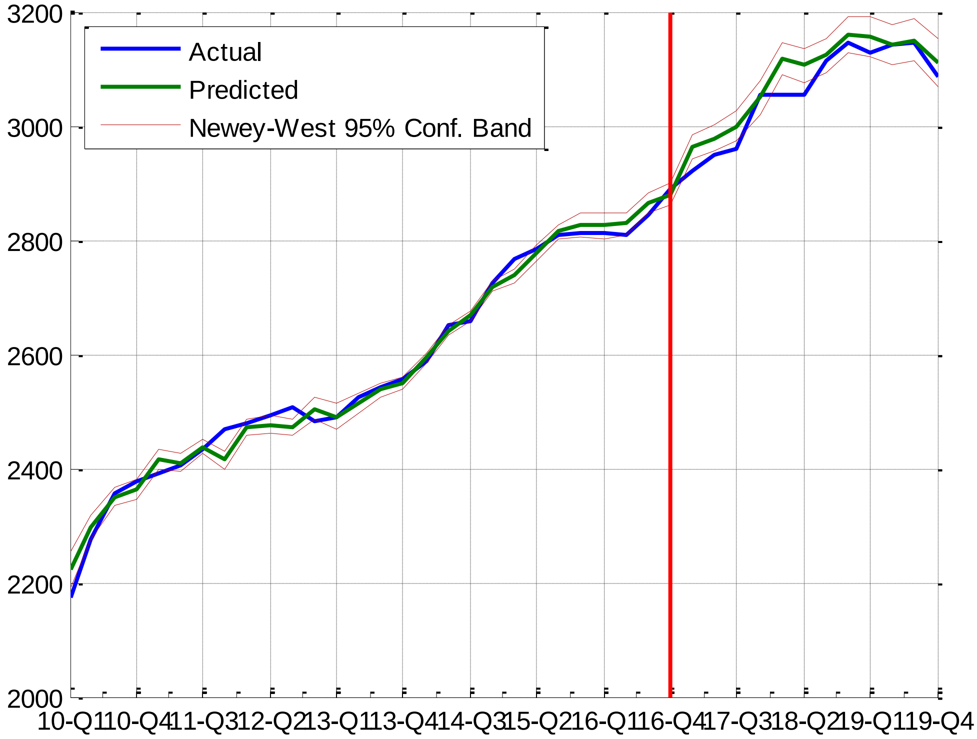


Table 18: Counterfactual prediction of US real imports (US Dollar, billions, 2015, annual level), third specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	346.7	138.19	2.5089
Austria	3.1556	1.4381	2.1942
Czech Republic	1.6596	0.81525	2.0357
Mexico	1.2466	0.30981	4.0237
New Zealand	6.513	4.3625	1.493
$\bar{R}^2 = 0.9903$	Engle-Granger cointegration tau-stat. = -5.24; with p-value = 0.0291		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = -49.11	Std.dev. = 4.22	*T* = -11.64	p-value = 0.0000
Treatment fits to a non-stationary AR(4)-model			
STE = -126.09 (*T* = -3.04; p-value = 0.0559)			
Cumulative treatment effect = -147.33			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 17: Actual and predicted real imports of the US (in billions of US dollars, 2015, annual level), third specification

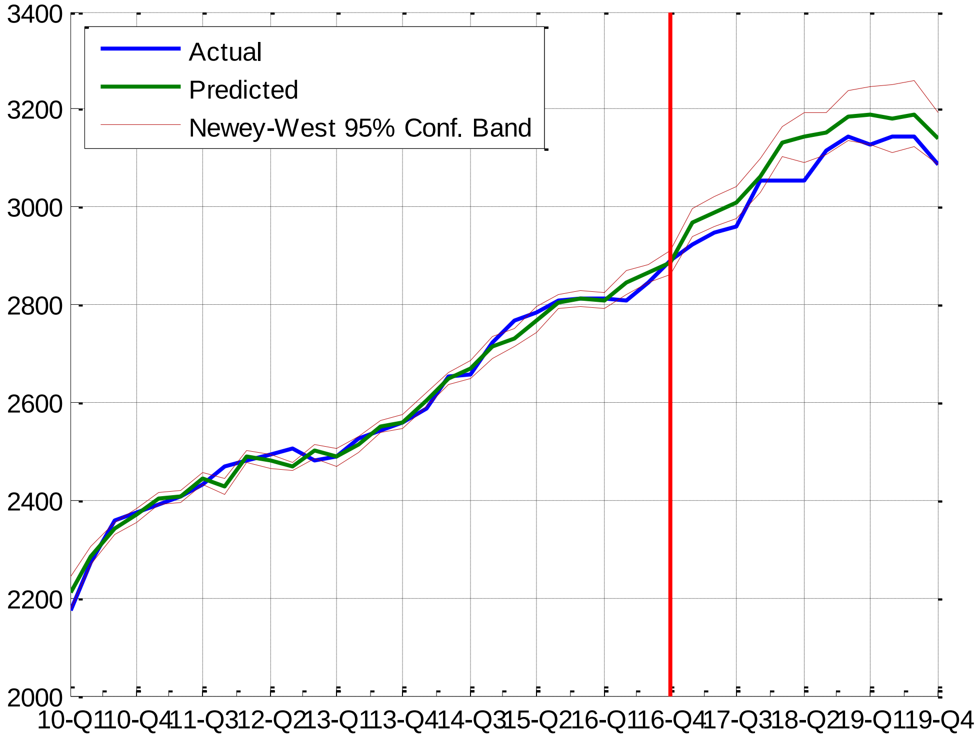


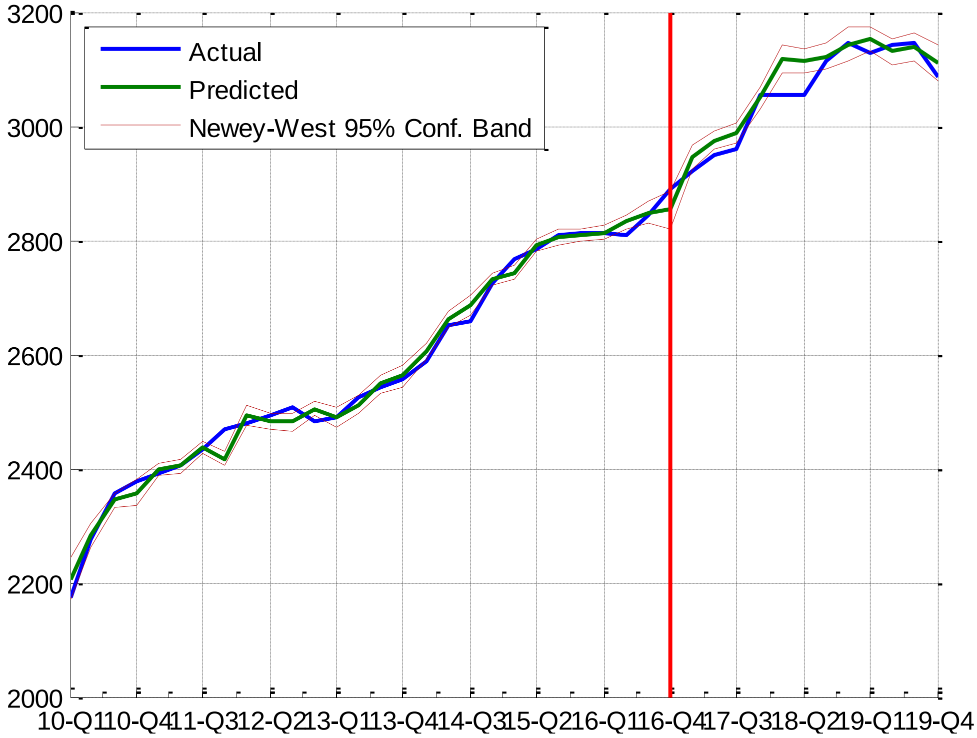
Table 19: Counterfactual prediction of US real imports (US Dollar, billions, 2015, annual level), fourth specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	387.20	128.85	3.01
Canada	0.89	0.44	2.04
Czech Republic	3.22	0.72	4.50
Mexico	1.11	0.33	3.33
New Zealand	3.13	4.75	0.66
$\bar{R}^2$ = 0.9900	Engle-Granger cointegration tau-stat. = -5.35; with p-value = 0.0235		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = -19.12	Std.dev. = 6.95	*T* = -2.75	p-value = 0.0189
Cumulative treatment effect = -57.35			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 18: Actual and predicted real imports of the US (in billions of US dollars, 2015, annual level), fourth specification



4.6 Results for the Balance of Trade and the Current Account

In the first specification for the US balance of trade, the predictors chosen by the LASSO are Canada, Israel, Lithuania and Slovenia. By deleting Canada from the donor pool, the LASSO procedure adds Denmark and the UK to the second specification. The adjusted R-squared of the first and second specification is 92.0% and 88.8%, respectively, whereas the linear combination of the variables is cointegrated at the 5 percent level in each specification. The results of both specifications show similar values and significances: The ATE equals about 36 billion US dollars and is statistically significant at the 1 percent level, whereas the STE is about 17 billion US dollars and significant at the 5 percent level. The long-term treatment effect equals 42 billion US dollars, which is significant at the 1 percent level. For both calculations, the cumulated treatment effect is about -430 billion US dollars.

For the current account balance panel data, we also estimate two specifications. Using the LASSO procedure, the selected predictors in the first specification are Iceland, Italy, Portugal and Spain, which lead to an adjusted R-squared of 83.3%. The Engle-Granger test indicates the presence of a cointegrated linear model at the 5 percent level. In the second estimation, the LASSO method picks Greece, Iceland, Italy and the Slovak Republic as donors. The adjusted R-squared is 86.8% and the p-value of the Engle-Granger test equals 0.0077. Neither specification provides much evidence for significant treatment effects. However, Figure 21 and 22 illustrate, that the actual current account balance has been relatively volatile during the Trump Administration. While the actual current account deficit was smaller than estimated in 2017/18 (until mid-2018; see Q3 with the reversal of the development), one should take into account that the upward momentum was already visible in 2015/16 so that it seems unlikely that the Trump Administration was responsible for this development in the first two years. During 2019, the US current account position has strongly improved; this happened mainly since the US Administration started to impose import tariffs and other barriers on imports from China as well as certain Western countries. The performance of the US trade balance under the Trump Administration was below the predicted figures, only in the field of the current account balance did 2019 bring a relative improvement of the current account balance relative to GDP. As regards the US trade balance position, there was a strong worsening of the US position already during the pre-treatment period of 2013-2016; the rise of Chinese exports was a major driver for this development.

These developments are partly explained by US economic policy under Trump: Expansionary fiscal policy – in the midst of an economic upswing – raised US import demand in 2017/18 and thus weakened the trade balance and the current account balance, respectively. Moreover, trade policy had an effect and in late 2019 the current account balance improved more strongly than predicted. Besides direct trade policy effects, there were also effects on the export-side related to the Trump tax reform – with the tax reform stimulating higher exports. There was, however, an economic counter-effect which comes from the indirect effect related to US subsidiaries abroad, particularly in China (and in Europe). If US trade barriers vis-à-vis firms from China slows down economic growth in China, there is a double negative effect for US subsidiaries in China: To the extent that they produce for the local Chinese market, the production and profitability of US subsidiaries is undermined and the same holds if part of output of subsidiaries in China normally is exported back to the US – either as a final product or an intermediate product (WELFENS, 2019b). It can be shown that the standard optimum tariff is no longer holding if there is not only trade but also outward foreign direct investment (WELFENS, 2020): The optimum import tariff is smaller than the standard approach in the literature (ignoring FDI aspects) suggests. BLANCHARD/MATSCHKE (2016) have shown that US multinational companies with outward FDI have successfully lobbied previous administrations – i.e., before the Trump Administration - to get US market access for export products from subsidiaries abroad. However, it seems that under the Trump Administration the new trade policy undermines the US market access effect of US multinational companies’ lobbying efforts.

Table 20: Counterfactual prediction of US real balance of trade (US Dollar, millions, 2012, quarterly level), first specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	-160080	6260.00	-25.57
Canada	-1.54	0.45	-3.43
Israel	1.38	0.37	3.72
Lithuania	39.95	8.79	4.55
Slovenia	-35.47	8.41	-4.22
$\bar{R}^2$ = 0.9199	Engle-Granger cointegration tau-stat. = -5.12; with p-value = 0.0358		
Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = -36369.1	Std.dev. = 7045.2	*T* = -5.16	p-value = 0.0003
Treatment fits to a stationary AR(1)-model:			
LTE = -41506 (Wald-stat. = 13.9845; p-value = 0.0002)			
STE = -17149.80 (*T* = -3.0237; p-value = 0.0144)			
Cumulative treatment effect = -436,429			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 19: Actual and predicted balance of trade of the US (in billions of US dollars, 2012, quarterly level), first specification

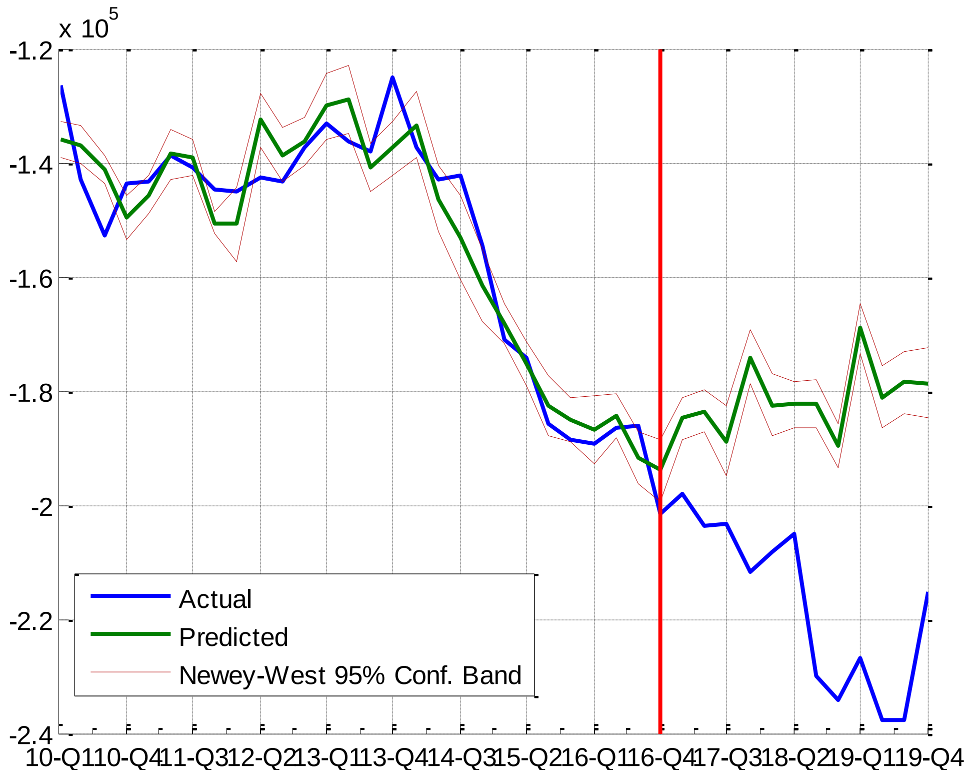


Table 21: Counterfactual prediction of US real balance of trade (US Dollar, millions, 2012, quarterly level), second specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	-167140	18281.00	-9.14
Denmark	0.54	0.55	0.98
Israel	1.66	0.43	3.81
Lithuania	54.59	9.97	5.47
Slovenia	-49.64	9.20	-5.40
UK	0.37	0.42	0.87
$\bar{R}^2$ = 0.8880	Engle-Granger cointegration tau-stat. = -5.82; with p-value = 0.0217		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = -35919	Std.dev. = 8970.66	*T* = -4.00	p-value = 0.0021
Treatment fits to a stationary AR(1)-model:			
LTE = -42043.5 (Wald-stat. = 14.0995; p-value = 0.0002)			
STE = -16553 (*T* = -2.2898; p-value = 0.0478)			
Cumulative treatment effect = -431,028			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 20: Actual and predicted balance of trade of the US (in billions of US dollars, 2012, quarterly level), second specification

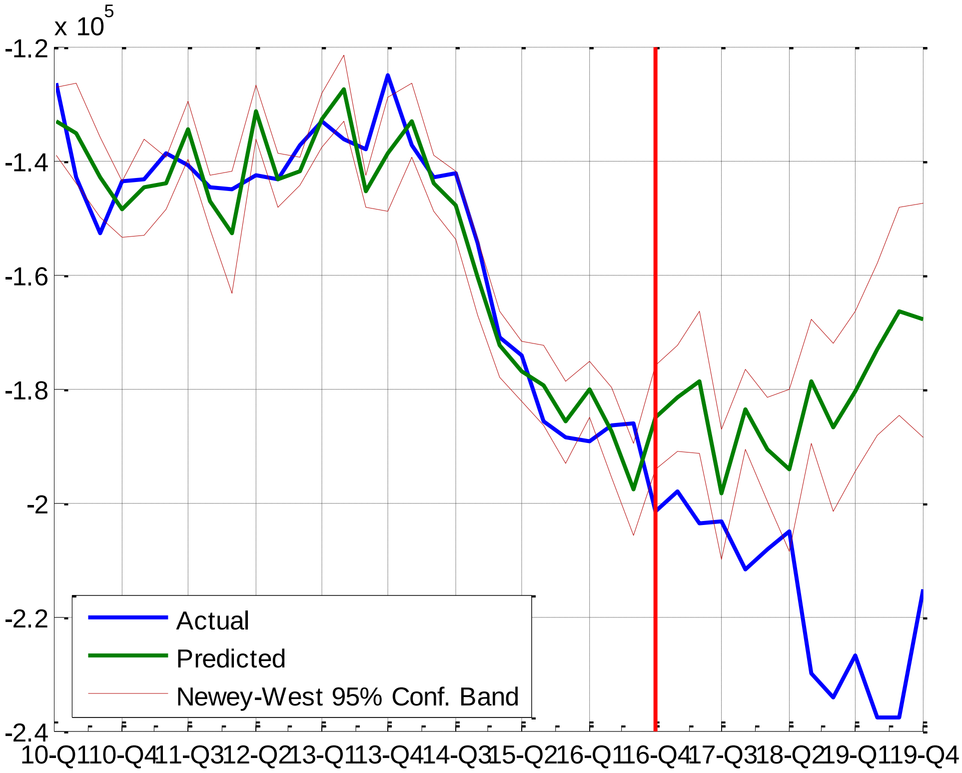


Table 22: Counterfactual prediction of US current account balance (in percent of GDP), first specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)

	Coefficient	Std.dev.	*T*
Constant	-2.3500	0.0688	-34.142
Iceland	0.0252	0.0106	2.3739
Italy	0.0405	0.0580	0.6979
Portugal	0.0382	0.0230	1.6596
Spain	-0.0119	0.0617	-0.1928

$\bar{R}^2 = 0.8325$ Engle-Granger cointegration tau-stat. = -4.99; with p-value = 0.0459

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)

Constant OLS model with HAC standard errors:

ATE = 0.0408 Std.dev. = 0.1120 $T = 0.3639$ p-value = 0.7228

Treatment fits to a stationary AR(4)-model:

LTE = 0.0620 (Wald-stat. = 0.0109; p-value = 0.9168)

STE = 0.0641 ($T = 0.9535$; p-value = 0.4107)

Cumulative treatment effect = 0.49

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 21: Actual and predicted current account balance of the US (in percent of GDP), first specification

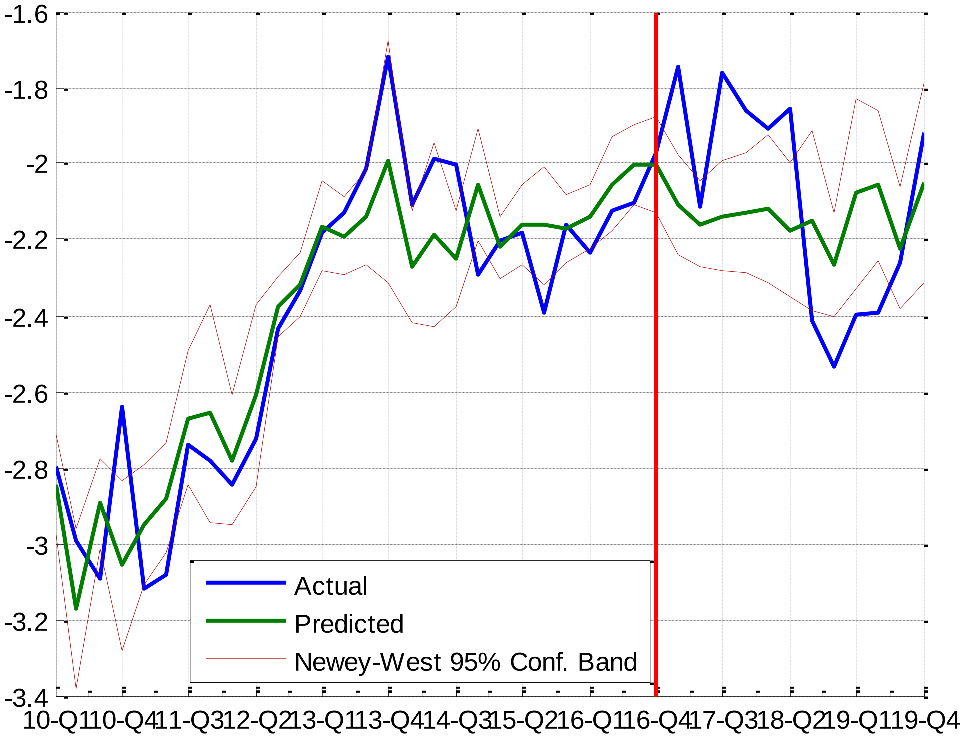


Table 23: Counterfactual prediction of US current account balance (in percent of GDP), second specification

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2016Q4)			
	Coefficient	Std.dev.	*T*
Constant	-2.3042	0.0653	-35.302
Greece	0.0233	0.0151	1.5414
Iceland	0.0332	0.0091	3.6811
Italy	0.0160	0.0392	0.4092
Slovak Republic	0.0300	0.0127	2.3665
$\bar{R}^2 = 0.8676$	Engle-Granger cointegration tau-stat. = -5.97; with p-value = 0.0077)		

Panel B: Treatment effects in the Trump period (2017Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = 0.1355	Std.dev. = 0.1179	*T* = 1.1494	p-value = 0.2748
Treatment fits to a stationary AR(4)-model:			
LTE = 0.1798 (Wald-stat. = 0.7033; p-value = 0.4017)			
STE = 0.222 (*T* = 4.8368; p-value = 0.0169)			

Cumulative treatment effect = 1.63

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 22: Actual and predicted current account balance of the US (in percent of GDP), second specification

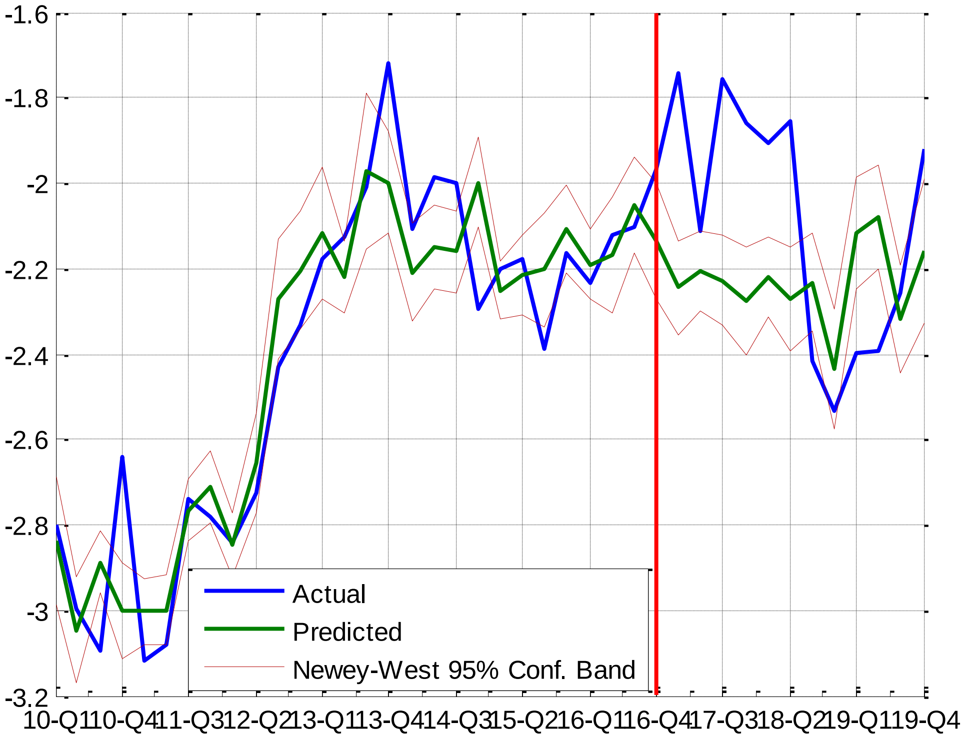


Table 24: Counterfactual prediction of US real balance of trade (US Dollar, millions, 2012, quarterly level), cut-off T_1=2018Q1

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2017Q4)			
	Coefficient	Std.dev.	*T*
Constant	-142530	8625.80	-16.52
France	1.66	0.77	2.15
Israel	1.95	0.44	4.48
Lithuania	33.27	12.53	2.66
Slovenia	-48.73	9.02	-5.40
$\bar{R}^2$ = 0.9033	Engle-Granger cointegration tau-stat. = -5.12; with p-value = 0.0315		

Panel B: Treatment effects in the Trump period (2018Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = -31626.9	Std.dev. = 8970.66	*T* = -4.52	p-value = 0.0027

Treatment fits to a stationary AR(2)-model:
LTE = -38331.7 (Wald-stat. = 0.52; p-value = 0.4706)
STE = -44870 (T = -13.38; p-value = 0.0009)
Cumulative treatment effect = -253,015

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 23: Actual and predicted balance of trade of the US (US dollar, millions, 2012, quarterly level), cut-off T₁=2018Q1

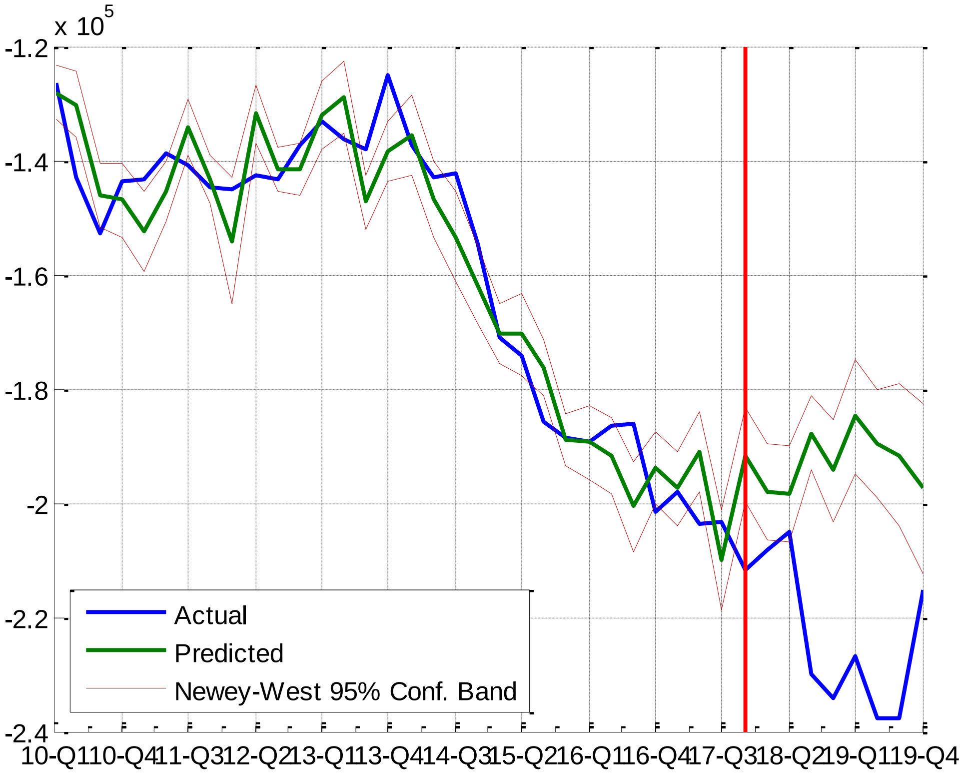


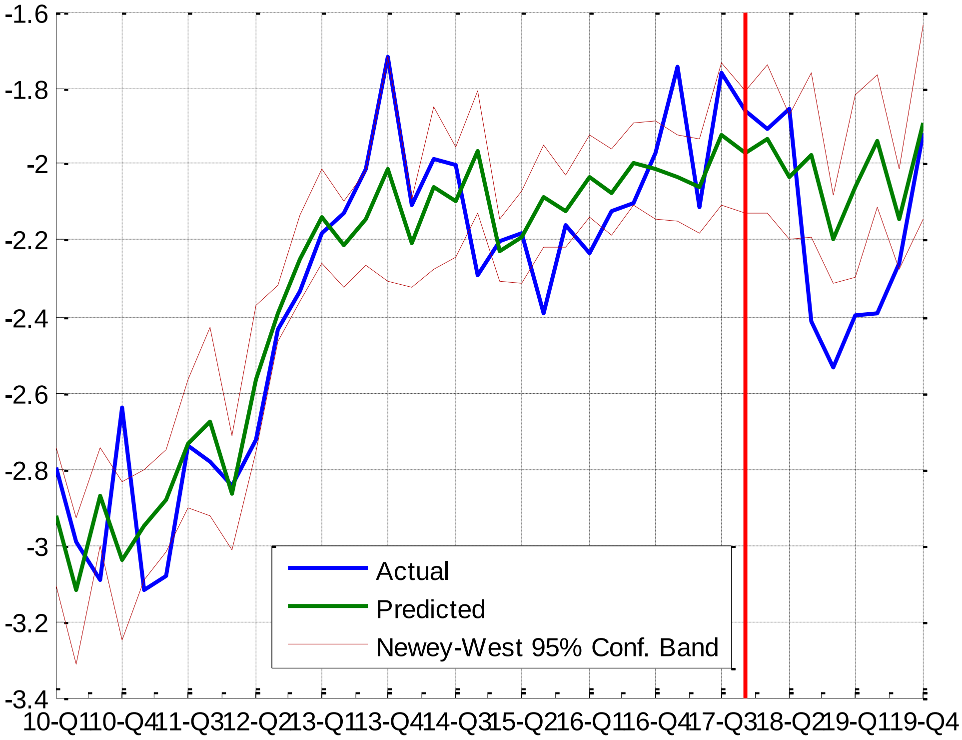
Table 25: Counterfactual prediction of US current account balance (in percent of GDP), cut-off T_1=2018Q1

Panel A: Weights of LASSO-predictors for the pre-Trump period (2010Q1 – 2017Q4)			
	Coefficient	Std.dev.	*T*
Constant	-2.44	0.10	-25.68
Iceland	0.02	0.01	1.74
Italy	0.03	0.07	0.43
Portugal	0.04	0.02	1.77
Slovenia	0.06	0.03	1.68
Spain	-0.04	0.06	-0.63
$\bar{R}^2$ = 0.8371	Engle-Granger cointegration tau-stat. = -5.76; with p-value = 0.0200)		

Panel B: Treatment effects in the Trump period (2018Q1 – 2019Q4)			
Constant OLS model with HAC standard errors:			
ATE = -0.1886	Std.dev. = 0.0883	*T* = -2.14	p-value = 0.0700
Treatment fits to a stationary AR(2)-model:			
LTE = -0.2709 (Wald-stat. = 2.10; p-value = 0.1468)			
STE = -0.3701 (*T* = -7.96; p-value = 0.0041)			
Cumulative treatment effect = -1.51			

ATE = Average treatment effect; LTE = Long-term treatment effect; STE = Short-term treatment effect

Figure 24: Actual and predicted current account balance of the US (in percent of GDP), cut-off T_1=2018Q1



As can be seen in Figure 24, the switch to the cut-off point 2018Q1 has the effect that the Trump Administration's performance in the field of the current account looks better in late 2019 when it finally reaches the predicted value – but there remains a cumulated "excess current account deficit" which corresponds to a higher US net international indebtedness so that one would also expect a real depreciation of the US dollar with a subsequent improvement of the current account once the (modified) Marshall Lerner (WELFENS, 2019a) condition holds.

5. Policy Conclusion

A strange element of the Trump Administration's trade policy was a strong emphasis on the trade balance which is not adequate from a theoretical perspective if the economy is already in full employment as was the case in 2017/18. The relevant focus should have been the US current account balance and it is only the current account balance which matters for example for the real exchange rate. However, the Trump Administration's tax policy was quite inconsistent in this context since an expansionary fiscal policy raises the current account. An improvement of the current account position would bring a real appreciation of the US $ and a stronger dollar would stimulate US outward foreign direct investment. It is, however, unclear whether or not the Trump Administration had any explicit focus on the real exchange rate.

The overall finding is that the Trump Administration has underperformed in the field of GDP development and an improvement of the current account balance in late 2019. At the same time, the US performance with respect to achieving low unemployment was rather favourable – but not necessarily due to President Trump's economic policies – and the gross capital formation also was higher than one would normally expect; here President Trump's tax reform obviously had an impact, namely raising investment. However, as is well known from the neoclassical growth modelling analysis and the golden rule approach, respectively (PHELPS, 1961; WELFENS, 2017), raising the investment-GDP ratio is not necessarily welfare enhancing, namely if the higher investment does not bring about a maximum steady state per capita consumption.

As regards the results presented, one may note a potential caveat which is particular to the US: To the extent that the doppelganger countries considered are not structurally comparable to the US with respect to its international position as a leading foreign reserve country some aspects related to the interest rate and the exchange rate (and related variables), respectively - both are strongly linked to each other, for example in the context of the basic Branson model of the exchange rate under flexible exchange rates (BRANSON, 1977) - might not be fully covered by the methodology applied. The number of international reserve currencies is quite small if one considers key countries beyond the US: Only the UK, Germany/the Eurozone, Japan and China can be considered to be reserve currency countries.

The analysis of counterfactual macro analysis for a synthetic twin/doppelganger of the US under President Trump has brought a series of interesting insights which partly shed a negative light on the US performance in the period of the Trump Administration. We get an answer as to the extent to which Trump policy really raised the US economic performance indicators – in various fields – beyond "normal" economic dynamics as predicted on the basis of a synthetic doppelganger. Looking at 2017-2019, the comparison of US economic performance with that of a synthetic "twin country" (doppelganger country group) is useful and suggests that the Trump Administration's performance clearly is less successful than the US President has claimed when arguing that the US performance was exceptionally good. Trump's policy course has undermined both output growth and worsened the current account. However, gross fixed capital formation and the unemployment rate have better performed than predicted.

The combination of modest output growth and lower unemployment rates suggests the Trump Administration has created certain inefficiencies in the US economy. From this perspective, labor retraining measures could have been applied more strongly in the US so that real GDP performance would have benefitted from higher productivity growth dynamics than those observed in the US in 2017-2019. In a similar vein, one may point out that the relatively high gross capital formation in the US could stand partly for a weakness of investment projects in the United States – for example, the aggressive Trump trade policy is likely to have caused some tariff-jumping outward foreign direct investment in the US (possibly also anticipating further political international arm-twisting of the US president) which in normal circumstances would not have occurred. This implies that part of the inward FDI inflows into the United States might reflect weakly efficient investment projects. Further research would be needed to carefully explore these potential links. From a policy perspective, one may suggest that the US should increase its very low government spending on the retraining of workers. If government would invest more in the retraining of unskilled and skilled workers, the basis for more knowledge-intensive and technology-intensive production in the US would improve; and higher innovation dynamics will stand for positive externalities. From an economic perspective, there is thus an indirect link between higher expenditures on retraining and higher innovation dynamics. There is, however, a need to conduct additional research about this topic.

As regards the current account balance of the US under President Trump in 2017-2019, one may argue that the desired improvement of the US current account balance was indeed achieved by President Trump in 2019. With the coronavirus pandemic-related global recession, output has declined massively in many OECD countries – rather strongly in the US, where the infection dynamics were rather poor; not least as the US epidemic policy was rather inconsistent and weak so that the US output decline was very strong in the second quarter 2020 and could also be strong in part of the third quarter.

As regards the long run US economic performance, there is some likelihood that very high deficit-GDP ratios of the Trump Administration in the economic upswing 2017-2019 have brought about a tendency towards a much higher debt-GDP ratio in the long run provided no strong consolidation measures would be adopted by future US Administrations. This suggests that part of the US economic upswing in 2018/19 is artificial and indeed comes at the price of lower future economic growth. These additional aspects of Trump’s economic policy need further research.

If one recalls the critical remarks of the IMF in the 2019 Article IV US Report, one may argue that the traditional focus of the Trump Administration on key macroeconomic figures is partly misleading since the US President has achieved little success in the areas which he has emphasized. At the same time, one may argue that the emphasis on macro variables is diverting public attention away from income inequality variables and variables related to social policies where the performance of the Trump Administration was particularly poor – an important aspect if one takes into account Trump’s rhetoric of the campaign year prior to his election in 2016 during which he had emphasized that he would improve the economic position of the forgotten men and women; for example, the share of the US population without health insurance coverage increased from 11 percent under the Obama Administration to 13 percent in 2019 and further in the Corona shock year 2020. At the bottom line, the key findings for the Trump Administration are rather unfavorable in the medium term.

The long run economic implications of the Trump Administration are even worse, since the rather unstable and inconsistent US economic policy has undermined the international policy reputation of the US; indeed, in 2020 Corona shock was the first case of an international economic crisis in which there was no international US leadership in the modern era. Since Trump has ignored basic textbook rules for controlling the budget deficit ratio during the economic upswing in 2017/18, the deficit and debt dynamics of the United States are rather unfavorable: There could be an enhanced need for future income tax rate increases which then would slow down economic expansion as the level of the growth path would be reduced. Finally, the inconsistent US trade policy has greatly contributed to a weakening of the international system, the role of the World Trade Organization has been particularly undermined. A weaker rule of international law is poised to undermine global economic trade growth and therefore is likely to reduce US economic growth in the long run. The main economic prize for the US and world economy could be higher in the long run than in the short term and the medium term.

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