Beziehung zwischen Schweizer Exporten und Importen und dem Wert des Schweizer Frankens

September 23, 2017

from IPython.display import HTML
HTML('''
''')

In [1]:
```
from IPython.core.interactiveshell import InteractiveShell
InteractiveShell.ast_node_interactivity = "all"
```

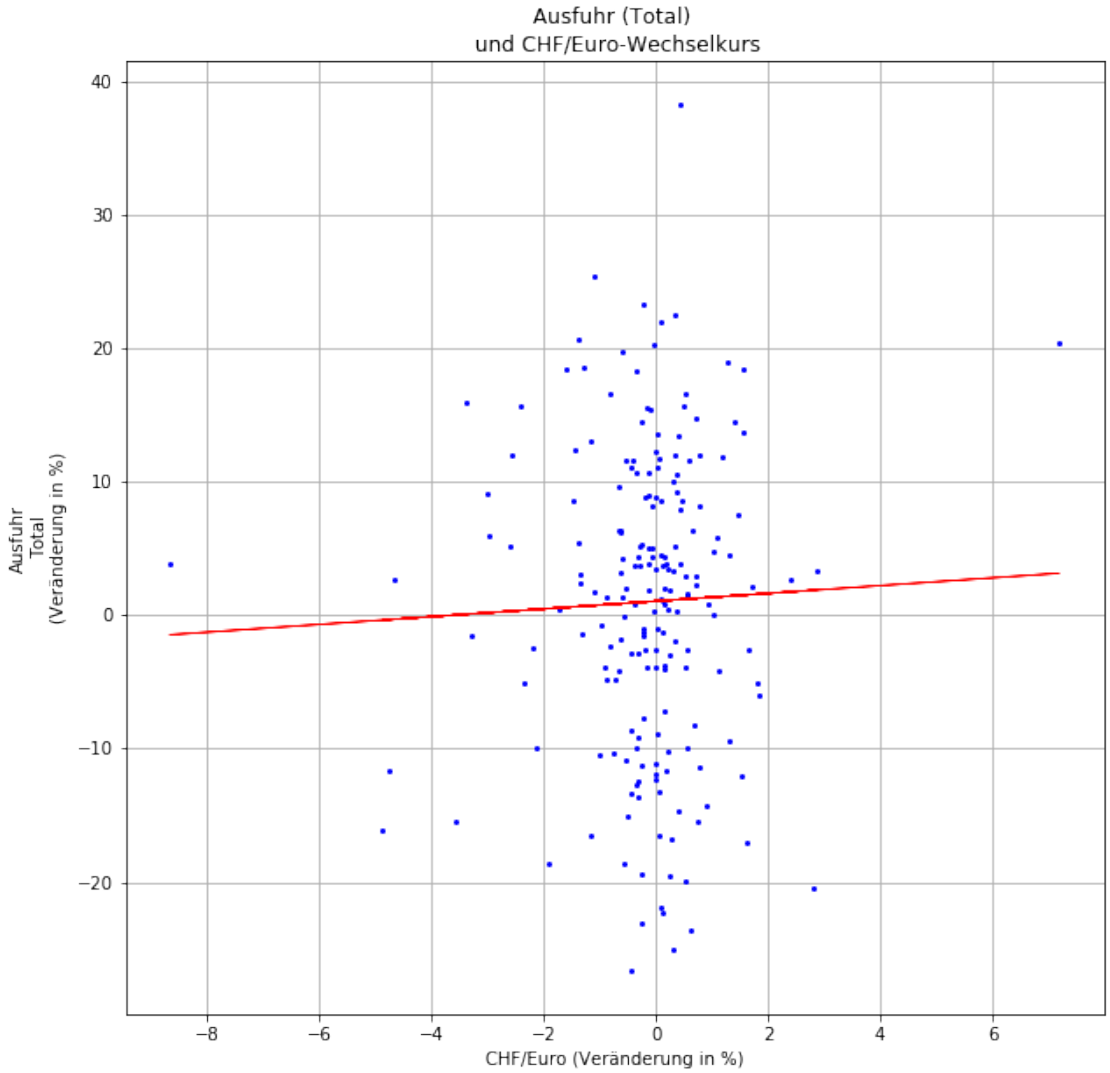
from IPython.display import HTML HTML('''
To toggle on/off output_stderr, click here.''')

In [2]:
```
%matplotlib inline
```

In [3]:
```
import os
import pandas as pd



os.chdir("/Users/dominiquepaul/xJob/1-DataWithPythonCourse/4-Data/")

data_xrates = pd.read_csv("dataforanalysis_xrates.csv", sep = ",", index_col = 0)
data_aussen = pd.read_csv("dataforanalysis_aussen.csv", sep = ",", index_col = 0)

# remember to change the directory if your scripts are in other places than your data
os.chdir("/Users/dominiquepaul/xJob/1-DataWithPythonCourse/1-Python")

from lec7getAnalysis2 import get_analysis


# Now we want to start massproduction of graphs!
# Create a folder inside your working directory,
# call it plots

typelist = data_aussen.ix[data_aussen.ix[:,"D0"] == "Ausfuhr","D1"].unique()

for i in typelist:
        currency = data_xrates.ix[:,"D1"].unique()[0]
        trade_direction = "Ausfuhr"
```

```
                type_of_goods = i

                print("Reaktion von" + trade_direction + " (" + type_of_goods + ") auf" + curre

                get_analysis(currency,
                      trade_direction,
                      type_of_goods,
                      measure = "Wert in Millionen Franken",
                      save_graph = False)
```

```
/anaconda/lib/python3.6/site-packages/ipykernel_launcher.py:22: DeprecationWarning:
.ix is deprecated. Please use
.loc for label based indexing or
.iloc for positional indexing

See the documentation here:
http://pandas.pydata.org/pandas-docs/stable/indexing.html#deprecate_ix
/anaconda/lib/python3.6/site-packages/ipykernel_launcher.py:25: DeprecationWarning:
.ix is deprecated. Please use
.loc for label based indexing or
.iloc for positional indexing

See the documentation here:
http://pandas.pydata.org/pandas-docs/stable/indexing.html#deprecate_ix


Reaktion vonAusfuhr (Total) aufCHF/Euro-Wechselkurs
```



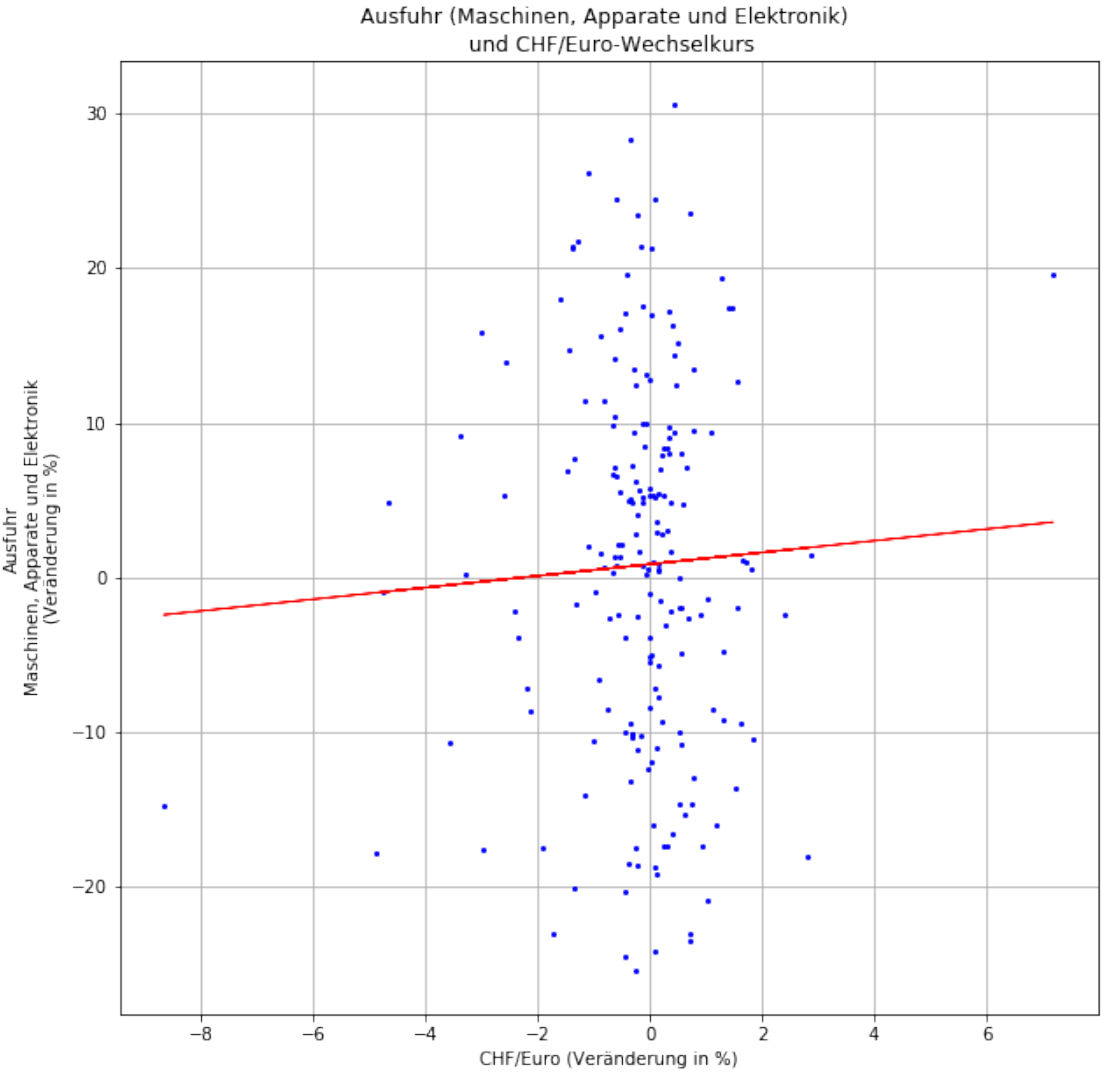
Die zugehoerige Regressionstabelle sieht wie folgt aus.

OLS Regression Results

Dep. Variable:	Ausfuhr-Total	R-squared:	0.001
Model:	OLS	Adj. R-squared:	-0.004
Method:	Least Squares	F-statistic:	0.1133
Date:	Sat, 23 Sep 2017	Prob (F-statistic):	0.737
Time:	22:07:24	Log-Likelihood:	-762.67
No. Observations:	198	AIC:	1527.
Df Residuals:	197	BIC:	1531.
Df Model:	1		
Covariance Type:	nonrobust		

```
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
CHF/Euro       0.1927      0.573      0.337      0.737      -0.936       1.322
==============================================================================
Omnibus:                        0.269   Durbin-Watson:                   2.781
Prob(Omnibus):                  0.874   Jarque-Bera (JB):                0.332
Skew:                          -0.086   Prob(JB):                        0.847
Kurtosis:                       2.898   Cond. No.                         1.00
==============================================================================

Warnings:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
```

Das R^2 betraegt 0.001.
Wir haben hier keine statistisch signifikante Beziehung.
Reaktion vonAusfuhr (Maschinen, Apparate und Elektronik) aufCHF/Euro-Wechselkurs

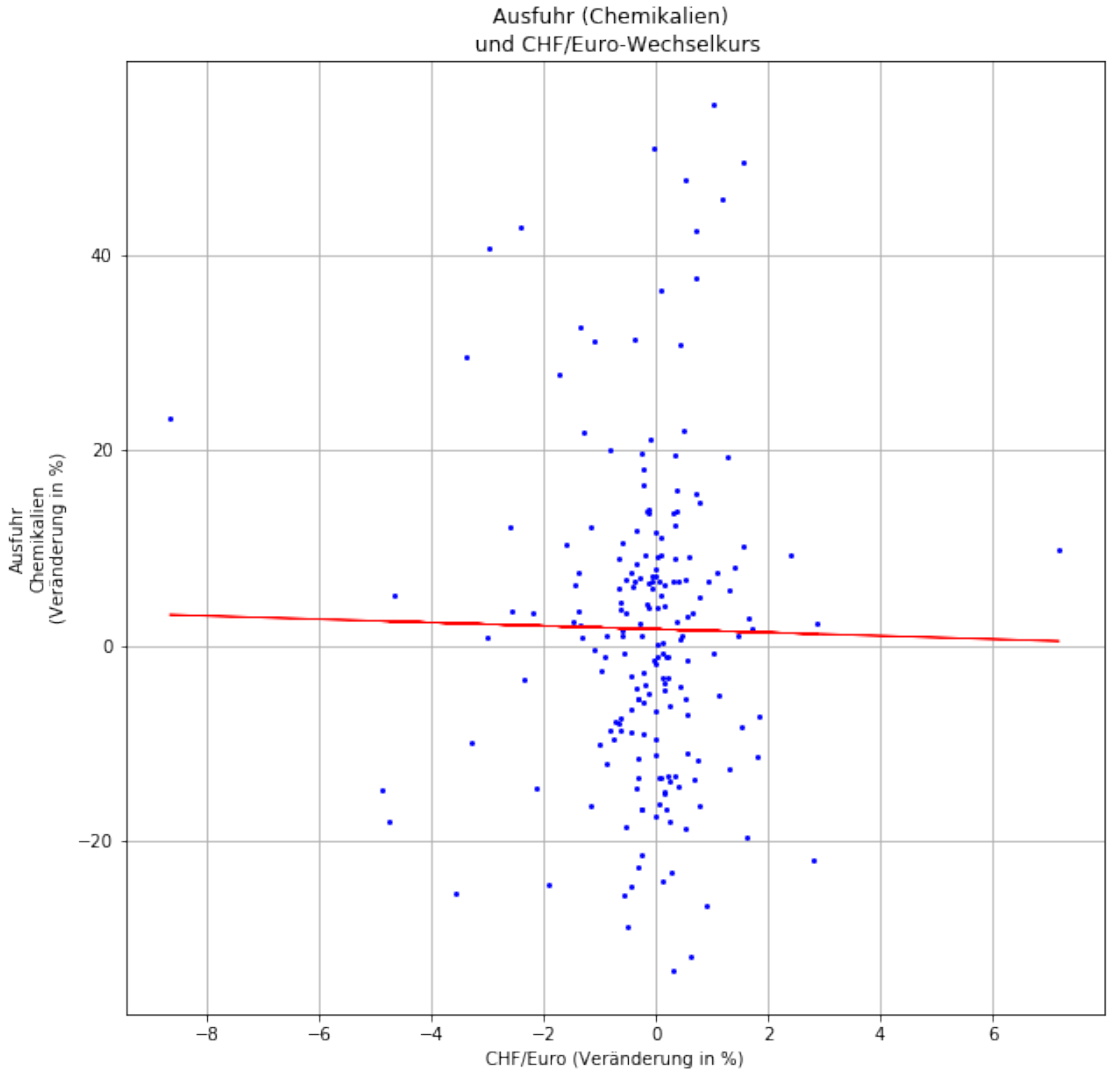


Die zugehoerige Regressionstabelle sieht wie folgt aus.

OLS Regression Results

Dep. Variable:	Ausfuhr-Maschinen, Apparate und Elektronik	R-squared:	
Model:	OLS	Adj. R-squared:	
Method:	Least Squares	F-statistic:	
Date:	Sat, 23 Sep 2017	Prob (F-statistic):	
Time:	22:07:24	Log-Likelihood:	
No. Observations:	198	AIC:	
Df Residuals:	197	BIC:	
Df Model:	1		
Covariance Type:	nonrobust		

```
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
CHF/Euro       0.2972      0.617      0.482      0.630      -0.919       1.513
==============================================================================
Omnibus:                        4.879   Durbin-Watson:                   2.672
Prob(Omnibus):                  0.087   Jarque-Bera (JB):                2.872
Skew:                          -0.026   Prob(JB):                        0.238
Kurtosis:                       2.412   Cond. No.                         1.00
==============================================================================

Warnings:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.


Das R^2 betraegt 0.001.
Wir haben hier keine statistisch signifikante Beziehung.
Reaktion vonAusfuhr (Chemikalien) aufCHF/Euro-Wechselkurs
```



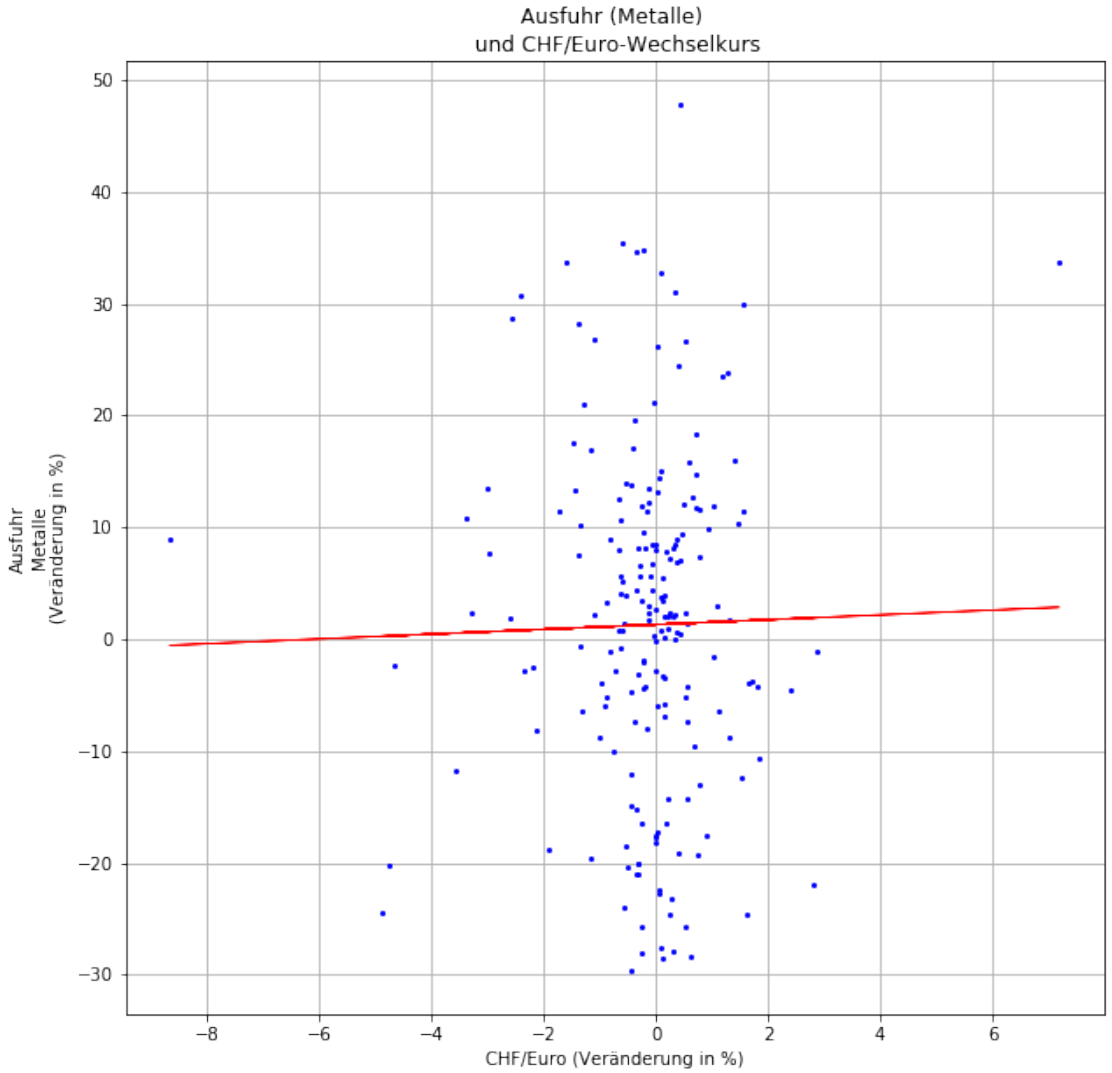
Die zugehoerige Regressionstabelle sieht wie folgt aus.

OLS Regression Results

Dep. Variable:	Ausfuhr-Chemikalien	R-squared:	0.001
Model:	OLS	Adj. R-squared:	-0.004
Method:	Least Squares	F-statistic:	0.1625
Date:	Sat, 23 Sep 2017	Prob (F-statistic):	0.687
Time:	22:07:25	Log-Likelihood:	-833.37
No. Observations:	198	AIC:	1669.
Df Residuals:	197	BIC:	1672.
Df Model:	1		
Covariance Type:	nonrobust		

```
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
CHF/Euro      -0.3298      0.818     -0.403      0.687      -1.944       1.284
==============================================================================
Omnibus:                       22.317   Durbin-Watson:                   3.018
Prob(Omnibus):                  0.000   Jarque-Bera (JB):               28.140
Skew:                           0.749   Prob(JB):                     7.75e-07
Kurtosis:                       4.079   Cond. No.                         1.00
==============================================================================

Warnings:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
```

Das R^2 betraegt 0.001.
Wir haben hier keine statistisch signifikante Beziehung.
Reaktion vonAusfuhr (Metalle) aufCHF/Euro-Wechselkurs

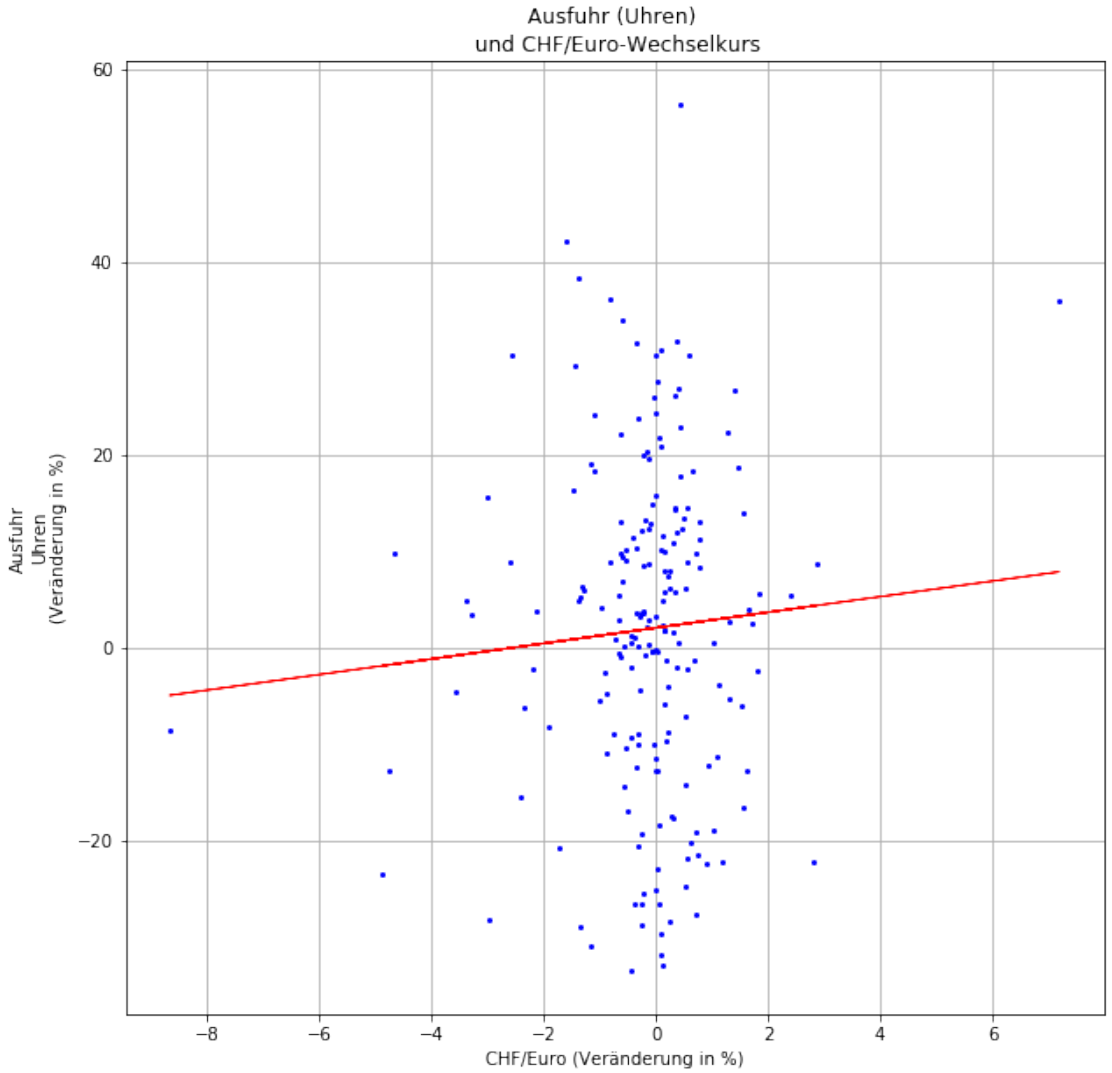


Die zugehoerige Regressionstabelle sieht wie folgt aus.

OLS Regression Results

Dep. Variable:	Ausfuhr-Metalle	R-squared:	0.000
Model:	OLS	Adj. R-squared:	-0.005
Method:	Least Squares	F-statistic:	0.01428
Date:	Sat, 23 Sep 2017	Prob (F-statistic):	0.905
Time:	22:07:25	Log-Likelihood:	-820.03
No. Observations:	198	AIC:	1642.
Df Residuals:	197	BIC:	1645.
Df Model:	1		
Covariance Type:	nonrobust		

```
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
CHF/Euro       0.0914      0.765      0.120      0.905      -1.417       1.600
==============================================================================
Omnibus:                        0.656   Durbin-Watson:                   2.767
Prob(Omnibus):                  0.720   Jarque-Bera (JB):                0.678
Skew:                           0.137   Prob(JB):                        0.712
Kurtosis:                       2.914   Cond. No.                         1.00
==============================================================================

Warnings:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.


Das R^2 betraegt 0.0.
Wir haben hier keine statistisch signifikante Beziehung.
Reaktion vonAusfuhr (Uhren) aufCHF/Euro-Wechselkurs
```



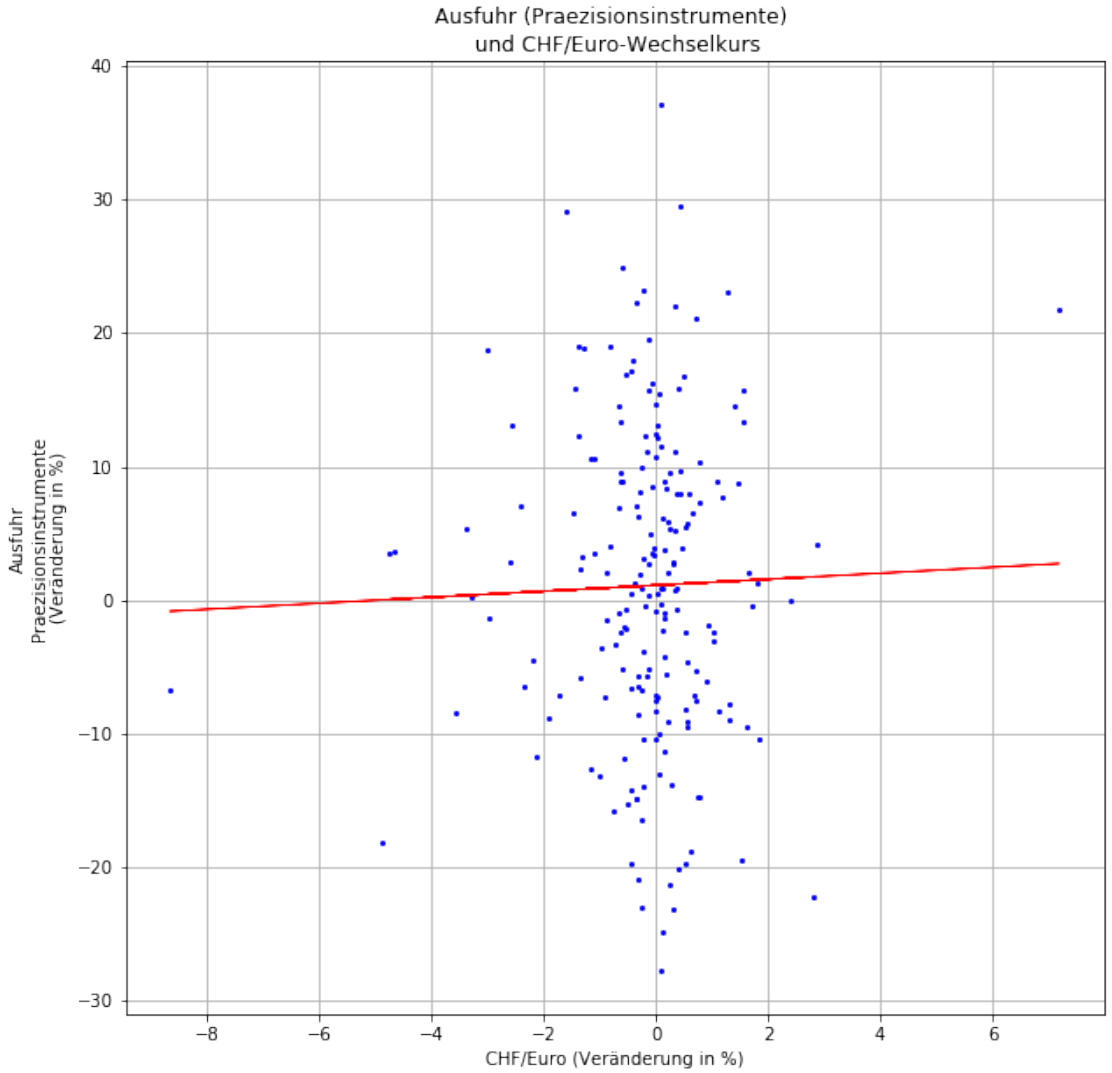
Die zugehoerige Regressionstabelle sieht wie folgt aus.

OLS Regression Results

Dep. Variable:	Ausfuhr-Uhren	R-squared:	0.003
Model:	OLS	Adj. R-squared:	-0.002
Method:	Least Squares	F-statistic:	0.5203
Date:	Sat, 23 Sep 2017	Prob (F-statistic):	0.472
Time:	22:07:26	Log-Likelihood:	-841.29
No. Observations:	198	AIC:	1685.
Df Residuals:	197	BIC:	1688.
Df Model:	1		
Covariance Type:	nonrobust		

```
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
CHF/Euro       0.6143      0.852      0.721      0.472      -1.065       2.294
==============================================================================
Omnibus:                        0.182   Durbin-Watson:                   2.197
Prob(Omnibus):                  0.913   Jarque-Bera (JB):                0.286
Skew:                           0.064   Prob(JB):                        0.867
Kurtosis:                       2.865   Cond. No.                         1.00
==============================================================================

Warnings:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
```

Das R^2 betraegt 0.003.
Wir haben hier keine statistisch signifikante Beziehung.
Reaktion vonAusfuhr (Praezisionsinstrumente) aufCHF/Euro-Wechselkurs

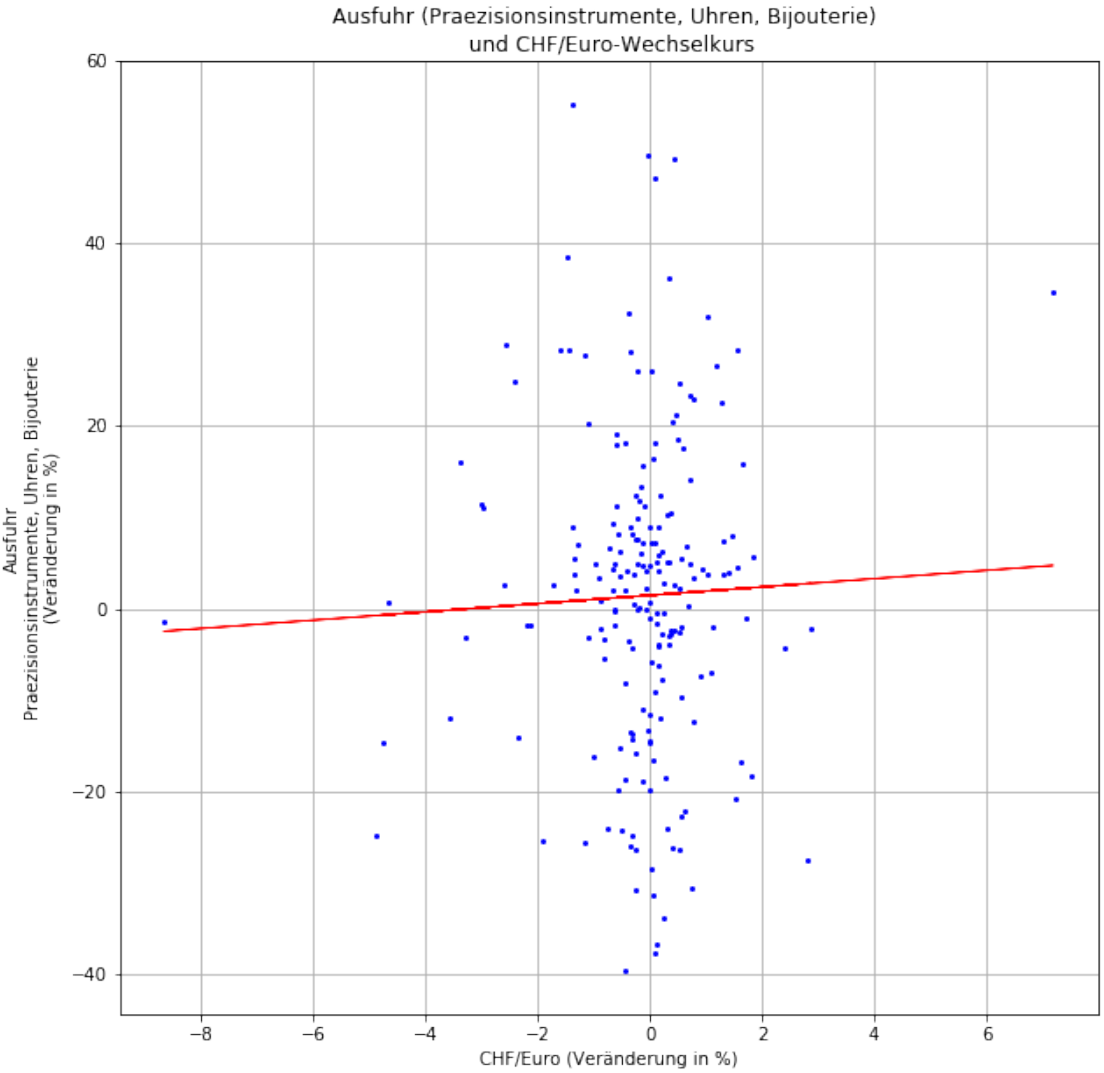


Die zugehoerige Regressionstabelle sieht wie folgt aus.

OLS Regression Results

Dep. Variable:	Ausfuhr-Praezisionsinstrumente	R-squared:	0.000
Model:	OLS	Adj. R-squared:	-0.005
Method:	Least Squares	F-statistic:	0.04030
Date:	Sat, 23 Sep 2017	Prob (F-statistic):	0.841
Time:	22:07:26	Log-Likelihood:	-769.33
No. Observations:	198	AIC:	1541.
Df Residuals:	197	BIC:	1544.
Df Model:	1		
Covariance Type:	nonrobust		

```
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
CHF/Euro       0.1189      0.592      0.201      0.841      -1.049       1.287
==============================================================================
Omnibus:                        0.260   Durbin-Watson:                   2.564
Prob(Omnibus):                  0.878   Jarque-Bera (JB):                0.370
Skew:                           0.077   Prob(JB):                        0.831
Kurtosis:                       2.854   Cond. No.                         1.00
==============================================================================

Warnings:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.


Das R^2 betraegt 0.0.
Wir haben hier keine statistisch signifikante Beziehung.
Reaktion vonAusfuhr (Praezisionsinstrumente, Uhren, Bijouterie) aufCHF/Euro-Wechselkurs
```



Die zugehoerige Regressionstabelle sieht wie folgt aus.

OLS Regression Results

Dep. Variable:	Ausfuhr-Praezisionsinstrumente, Uhren, Bijouterie	R-squared:	
Model:	OLS	Adj. R-squared:	
Method:	Least Squares	F-statistic:	
Date:	Sat, 23 Sep 2017	Prob (F-statistic):	
Time:	22:07:27	Log-Likelihood:	
No. Observations:	198	AIC:	
Df Residuals:	197	BIC:	
Df Model:	1		
Covariance Type:	nonrobust		

```
==============================================================================
                 coef    std err          t      P>|t|      [0.025      0.975]
------------------------------------------------------------------------------
CHF/Euro       0.3156      0.864      0.365      0.715      -1.388       2.019
==============================================================================
Omnibus:                        3.389   Durbin-Watson:                   2.980
Prob(Omnibus):                  0.184   Jarque-Bera (JB):                3.119
Skew:                           0.206   Prob(JB):                        0.210
Kurtosis:                       3.457   Cond. No.                         1.00
==============================================================================

Warnings:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.
```

Das R^2 betraegt 0.001.
Wir haben hier keine statistisch signifikante Beziehung.

In [ ]: