



# Effect of Economic Policy Uncertainty on the investment in numismatic assets: Evidence for the Walking Liberty Half Dollar

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## ABSTRACT

This study proposes to analyse the numismatic assets investment under Economic Policy Uncertainty (EPU). By applying a panel data approach to a sample of 25 different coins minted between 1916 and 1947 and valued annually from 2000 to 2019, it is shown that investing in the Walking Liberty Half Dollar can be considered a safe-haven asset when faced with EPU. However, of all the coins, only those minted during the Great Crash of 1929 and Second World War fulfil this characteristic. These findings have significant implications for investors, providing them with an attractive alternative investment in times of high EPU.

## 1. Introduction

Economic Policy Uncertainty (EPU) is an issue that has aroused great interest in recent years, especially since the 2008 global financial crisis, in which the uncertainty generated with respect to fiscal, regulatory and monetary policies caused a delay in the economic recovery (Apergis, 2015).

A line of research in the study of EPU is its impact on assets liable to investment. In this regard, the impact of this uncertainty has been investigated in stock markets (Brogaard and Deztel, 2015; Arouri et al., 2016; Das et al., 2019; Chen and Chiang, 2020) in commodity markets (Kang and Ratti, 2015; Andreasson et al., 2016; Huynh, 2020; Apergis et al., 2021) and in bond markets (Wang et al., 2017; Prüser and Schlösser, 2020; Paule-Vianez et al., 2021). Regarding alternative investments, the literature has primarily focused on cryptocurrencies, especially Bitcoin (Bouri et al., 2017; Demir et al., 2018; Wang et al., 2019; Paule-Vianez et al., 2020).

However, no study has been found that analyses the effect of EPU on investment in collectibles. In this regard, the consideration of this type of assets as an investment is not a residual issue. Chanel (1995) finds that investment in art is a suitable alternative in crisis situations. Mei and Moses (2002) observe how investment in art has a higher return than some investments in fixed income. They show how the consideration of works of art could be a good option to build long-term diversified investment portfolios. Campbell (2008) analyses art investments and observes that it is an alternative that provides benefits by including these assets in an investment portfolio. Regarding the philatelic market, Torres Pruñonosa and Coca Pérez (2005) compare philatelic investment with real estate investment in times of economic recession, showing that return on investment in real estate is negative and lower than on philatelic

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investment. Prado Román et al. (2012) study the construction of different portfolios composed of gold and noble metal numismatic assets, finding that investments in non-financial assets can be used as risk diversifiers. More recently, Öztürkkal and Togan-Eğrican (2020) analyses the behaviour of investment in Turkish art and show how this investment can be considered a hedging option to reduce portfolio volatility in times of uncertainty.

Following the argument of Bouoïyour et al. (2018) and Adediran et al. (2021) uncertainty is unfavourable for traditional financial markets because this situation reduces investors' trusts in the mainstream financial markets. And, within the wide range of uncertainties that financial markets can experience, the uncertainty surrounding politics and the economy stands out (Umar et al., 2021). Thus, economic policies play a vital role in the economic development of an economy, and any uncertainty in them slows down its development (Raza et al., 2018; Wu et al., 2019). Therefore, several studies have focused on investigating assets that can act as a safe haven against EPU (Bouri et al., 2017; Demir et al., 2018; Paule-Vianez et al., 2020).

Thus, based on the aforementioned, this study aims to analyse the impact that EPU may have on investing in collectibles and determine their possible role as a safe-haven asset when faced with this uncertainty. The purpose of this study is relevant to the literature. Although few studies have defended the suitability of investing in collectibles and have highlighted its possible role as a safe haven, no study to date has analysed the behaviour of these investments when faced with EPU. Specifically, this study examines the behaviour of the Walking Liberty Half Dollar. This American collector coin is highly significant in the numismatic market due to its years of minting, coinciding with periods of historical importance such as the World Wars or the Crash of 1929.

In addition, this article goes one step further. Within the numismatic market, the year of minting and the coin quality make the value of a particular coin differ. For this reason, we differentiate the possible impact of EPU on the returns of the Walking Liberty Half Dollar by considering the minting period and the quality of the coin.

By applying panel data to a sample of 25 different quality coins issued between 1916 and 1947 and valued annually from 2000 to 2019, it is found that EPU increases the annual return of these coins. However, when distinguishing by year of minting and coin quality, it is evidenced that only the coins minted during the Crash of 1929 and Second World War maintain this relationship. In this way, it is shown that investing in Walking Liberty Half Dollar coins minted since the Crash of 1929, can be considered a good option as a safe-haven asset when faced with EPU.

Thus, in this study we make the following contributions: (1) we analyse the impact that EPU can have on collectible investment returns, specifically on numismatic assets, being the first study that investigates the impact of this uncertainty on these assets; (2) we provide new evidence regarding the consideration of investment in collectibles as safe havens; and (3) finally, we add to the previous literature the consideration of the year of minting and the coin quality as relevant factors when determining the possible role of a numismatic asset as a safe haven.

From here the paper is structured as follows: Section 2 explains the data and methodology used in the study. Section 3 analyses the results obtained. And Section 4 shows the conclusions obtained.

## 2. Data and methodology

### 2.1. Data

To analyse the behaviour of the Walking Liberty Half Dollar when faced with EPU, a sample period that goes from 2000 to 2019 is used. And, as a measure of EPU, the popular US EPU index of Baker et al. (2016) is chosen (available at: <http://www.policyuncertainty.com>).

A total of 25 different quality coins are found under the Walking Liberty Half Dollar denomination, which were minted between 1916 and 1947. Thus, this study has selected the 25 coins, extracting their values from the prestigious catalogue "Standard Catalog of World Coins".

Table 1 shows the different quality coins and its definition.

The coins minted in each year are shown in Table 2.

This study has considered the price of silver, the price of the Dow Jones and the Gross Domestic Product as control variables. Silver has been included because it is the metal used for minting the coin, and the price of the minting metal is one of the fundamental variables to express the value of numismatic assets (Santos and González-Sánchez, 2019). The Dow Jones price has been selected as a benchmark for the US stock market and, therefore, as a representation of the value of traditional financial investments in this country.

**Table 1**

Degrees of conservation of the Walking Liberty Half Dollar.

Quality	Abbreviation	Definition
Good-4	G-4	Coins with a lot of wear.
Very Good-8	VG-8	Coins with significant wear.
Fine-12	F-12	Coins with moderate wear.
Very Fine-20	VF-20	Coins with slight wear.
Extra Fine-40	XF-40	Coins with very slight wear, high sharpness of the legends.
About Uncirculated-50	AU-50	Almost new coins. Traces of wear at the highest points of the coin.
Mint State-60	MS-60	Coin free of wear but with deteriorated shine.
Mint State-65	MS-65	Coins obtained from the factory without tampering.

Source: Own elaboration from the information of the "Standard Catalog of World Coins".

**Table 2**  
 Coins minted from the Walking Liberty Half Dollar by year.

Year	Coins minted (Units)
1916	608,000
1917	12,292,000
1918	6,634,000
1919	962,000
1920	6,372,000
1921	246,000
1923	2,178,000
1927	2,392,000
1928	1,940,000
1929	1,902,000
1933	1,786,000
1934	6,964,000
1935	9,162,000
1936	12,617,901
1937	9,527,728
1938	4,118,152
1939	6,820,808
1940	9,167,279
1941	24,207,412
1942	47,839,120
1943	53,190,000
1944	28,206,000
1945	31,502,000
1946	12,118,000
1947	4,094,000
Total	296,846,400

Source: Own elaboration from the information of the “Standard Catalog of World Coins”.

Based on the consideration of collectibles as safe-haven assets, an inverse relationship could be expected between the price of traditional investments and alternative investments. And finally, the Gross Domestic Product has been included because, as Prado Román (2012) indicates, the performance of the auction market depends on the purchasing power of its investors or collectors.

Table 3 shows the variables used in the study together with their definition.

Descriptive statistics on the different interval variables used in this analysis are shown in Table 4.

If we analyse the bivariate correlations between the different instrumental variables under study (Table 5), it is observed as only the correlations between EPU and Dow Price is greater than 0.50, but this is within the 0.90, threshold maximum suggested by Hair et al. (2010). Therefore, the multicollinearity problem does not arise in this study. It shows how Coin Value correlates positively with EPU and GDP, but negatively with Silver Price and Dow Price. These results support the possible influence of EPU on the value of numismatic investments and the possible safe-haven role of these investments.

Also, this study takes into account the year of minting and the coin quality when analysing the influence of EPU on the return of numismatic assets.

Considering the year of minting of the coins, these have been grouped by taking historical events: (1) coins minted from 1916 to 1918, characterized by the First World War; (2) coins minted between the First World War and the Great Depression, 1919–1929; (3) coins minted during the Great Depression, 1930–1939; and (4) coins minted during Second World War, 1940–1947.

Another relevant factor to consider is quality. For this purpose, the 8 coin qualities have been grouped into low quality (G-4 and VG-8), medium quality (F-12, VF-12, XF-40 and AU-50) and high quality (MS- 60 and MS-65).

**Table 3**  
 Definition of the variables used in the study.

Variable	Definition
Coin Value	Annual variation rate of the coin value.
EPU	Annual variation rate of EPU index.
Silver Price	Annual variation rate of the price of silver.
Dow Price	Annual variation rate of the Dow Jones Industrial price.
GDP	Annual variation rate of the US Gross Domestic Product.

Note: Annual variation rate refers to the relative variation of a year with respect to the previous one.

**Table 4**  
Descriptive statistics of the interval variables under study.

Variable	Coin Value	EPU	Silver Price	Dow Price	GDP
Mean	0.0590	0.0471	0.1064	0.0645	0.0397
Std. Dev	0.2816	0.2762	0.2744	0.1506	0.0182
Minimum	-0.8850	-0.4575	-0.3586	-0.3384	-0.0180
Maximum	12.7931	0.7128	0.8339	0.2650	0.0670

**Table 5**  
Bivariate correlations of the interval variables under study.

Variable	Coin Value	EPU	Silver Price	Dow Price	GDP
Coin Value	1.0000				
EPU	0.0990	1.0000			
Silver Price	-0.0981	0.0762	1.0000		
Dow Price	-0.1311	-0.5086	0.3111	1.0000	
GDP	0.0636	0.0137	-0.0221	0.0422	1.0000

## 2.2. Methodology

To achieve the proposed objectives, this study applies a panel data approach, as the dispersion of the 25 coins' value over different time periods makes this methodology more appropriate than transversal analysis and time series analysis (Wooldridge, 2011).

Within the panel data analysis, in order to determine the consistency of the selection of a fixed or random effects model, the Hausman test is applied. The results obtained show that the individual effect is correlated with the explanatory variables, so the fixed effects model is chosen. (1)

Thus, the model proposed to analyse the influence of EPU on the return of numismatic assets is as follows:

$$\begin{aligned} \text{Coin Value}_{it} = & \alpha + \beta_1 \text{EPU}_{it} + \beta_2 \text{SilverPrice}_{it} + \beta_3 \text{DowPrice}_{it} \\ & + \beta_4 \text{GDP}_{it} + v_i + u_{it}, \end{aligned} \quad (1)$$

where  $\text{CoinValue}_{it}$  is the dependent variable of the model,  $\alpha$  is the constant term,  $\beta_k$  is the regression coefficient corresponding to each explanatory variable  $k$ ,  $v_i$  is the constant fixed part of the error that represents the individual effects and  $u_{it}$  is the random part of the error. The sub-indices  $i$  and  $t$  represent the cross-sectional dimension and temporal dimension, respectively.

## 3. Results

Table 6 shows the results obtained for the entire sample. It is observed that EPU has a positive and significant impact on Coin Value with more than 99% confidence. Specifically, when considering the effect of the constant control variables, it is found that an increase of one unit in EPU from one year to the next is associated with an increase of 6.65% in Coin Value. Regarding the control variables, it is shown that Silver Price and Dow Price have a negative and significant impact on Coin Value, while GDP has a positive and significant impact.

These results show as EPU increases the return of the Walking Liberty Half Dollar. Therefore, this finding demonstrates the role played by this numismatic asset as a safe-haven asset when faced with EPU.

Following previous literature, it is interesting to analyse the relationship between the return of the Walking Liberty Half Dollar and EPU in times of crisis. For this, the interaction between EPU and the 2008 global financial crisis has been considered. Table 7 shows how the effect of the crisis is positive in the influence of EPU in Coin Value.

**Table 6**  
Regression results of the influence of EPU on the return of the Walking Liberty Half Dollar.

Coin Value	Coef.	Std. Err.	t	p value	[95% Conf. Interval]	
Cons	0.0340	0.0112	3.04	0.002***	0.0121	0.0560
EPU	0.0665	0.0199	3.34	0.001***	0.0274	0.1056
Silver Price	-0.0799	0.0182	-4.40	0.000***	-0.1155	-0.0443
Dow Price	-0.1428	0.0384	-3.72	0.000***	-0.2181	-0.0675
GDP	0.9947	0.2503	3.97	0.000***	0.5040	1.4855
R <sup>2</sup>	0.0282					
Rho	0.3785					
F test $u_i=0$ :	0.75					
(p value)	(0.996)					
N° Obs.	3800					
N° Groups	200					

Note: \*\*\*, \*\* and \* indicate the significance at 1%, 5% and 10% levels, respectively.

**Table 7**

Regression results of the influence of EPU on the return of the Walking Liberty Half Dollar considering times of crisis.

Coin Value	Coef.	Std. Err.	t	p value	[95% Conf. Interval]	
Cons	0.0332	0.0112	2.95	0.003***	0.0112	0.0552
EPU • Crisis	0.0610	0.0190	3.22	0.001***	0.0238	0.0982
Silver Price	-0.0743	0.0178	-4.17	0.000***	-0.1091	-0.0394
Dow Price	-0.1284	0.0416	-3.08	0.002***	-0.2100	-0.0468
GDP	0.9704	0.2509	3.87	0.000***	0.4785	1.4623
R <sup>2</sup>	0.0291					
Rho	0.0378					
F test $u_i=0$ : (p value)	0.75 (0.996)					
N° Obs.	3800					
N° Groups	200					

Note: \*\*\*, \*\* and \* indicate the significance at 1%, 5% and 10% levels, respectively.

This result shows how investment in numismatic assets is a suitable alternative in times of crisis.

Another question that arises is whether all the Walking Liberty Half Dollar coins issued can be considered a safe-haven asset against EPU.

Table 8 shows the results obtained when analysing the influence of EPU on the return of Walking Liberty Half Dollar coins minted in the periods: 1916–1918, 1919–1929, 1930–1939 and 1940–1947. The results obtained evidence an increasing relationship of the influence of this uncertainty on the return of the coin regarding its year of minting. Thus, it is shown that only EPU has a positive and significant impact on Coin Value for coins minted after 1930, with this impact being stronger in coins minted in the period 1940–1947. Specifically, it is found that an increase in EPU is associated with an increase of 16.29% in the return of the coins minted between 1940 and 1947.

Therefore, it is shown that only coins minted after 1930 act as a safe haven against uncertainty, especially those minted in the period corresponding to the Second World War.

Table 9 shows the results obtained when analysing the impact of EPU on the return of the Walking Liberty Half Dollar, distinguishing the year of minting of the coin and its quality. It is observed, as in Table 7, that EPU only has a positive and significant impact on Coin Value when the coin was minted after 1930. When distinguishing by quality, for coins minted between 1930 and 1939, it is found that higher quality coins are more responsive to EPU, while for coins minted between 1940 and 1947, the return of lower quality coins is affected by EPU more. Specifically, in the latter case, it is shown that with an increase of one unit in EPU, the return of these coins increases by 20.20%.

These results allow to determine that the coins minted between 1940 and 1947 of G-4 and VG-8 quality are the most recommended as a safe-haven asset against EPU.

A possible interpretation of these results could be found in the market availability of these coins. Although the oldest and highest quality coins have a higher value, they are also rarer, leading to fewer exchanges between investors and/or collectors. This encourages these types of scarcer assets to generate less interest regarding their consideration as investment assets due to their reduced liquidity.

**Table 8**

Regression results of the influence of EPU on the return of the Walking Liberty Half Dollar. Categorized by the year of minting of the coin.

Coin Value	1916–1918		1919–1929		1930–1939		1940–1947	
	Coef	t(p value)	Coef	t(p value)	Coef	t(p value)	Coef	t(p value)
Cons	-0.0112	-0.71 (0.48)	-0.0331	-1.06 (0.29)	0.0531	3.65 (0.00***)	0.0931	5.89 (0.00***)
EPU	0.0399	1.41 (0.16)	-0.0904	-1.62 (0.11)	0.1247	4.81 (0.00***)	0.1629	5.78 (0.00***)
Silver Price	-0.0216	-0.84 (0.40)	0.1098	2.16 (0.03**)	-0.1376	-5.82 (0.00***)	-0.2171	-8.45 (0.00***)
Dow Price	-0.0542	-1.00 (0.32)	-0.2654	-2.47 (0.01**)	-0.1348	-2.70 (0.01***)	-0.0759	-1.40 (0.16)
GDP	1.2051	3.40 (0.00***)	2.3308	3.33 (0.00***)	0.5617	1.73 (0.09*)	0.1257	0.36 (0.72)
R <sup>2</sup>	0.0426		0.0164		0.1029		0.1152	
Rho	0.0332		0.0445		0.0279		0.0178	
F test $u_i=0$ : (p value)	0.65 (0.89)		0.88 (0.71)		1.00 (1.00)		0.34 (1.00)	
N° Obs.	456		1064		1064		1216	
N° Groups	24		56		56		64	

Note: \*\*\*, \*\* and \* indicate the significance at 1%, 5% and 10% levels, respectively.

**Table 9**

Regression results of the influence of EPU on the return of the the Walking Liberty Half Dollar. Categorized by the year of minting and quality of the coin.

Coin Value	1916–1918			1919–1929			1930–1939			1940–1947		
	Low quality	Medium quality	High quality	Low quality	Medium quality	High quality	Low quality	Medium quality	High quality	Low quality	Medium quality	High quality
	Coef(p value)	Coef(p value)	Coef(p value)	Coef(p value)	Coef(p value)	Coef(p value)	Coef(p value)	Coef(p value)	Coef(p value)	Coef(p value)	Coef(p value)	Coef(p value)
Cons	0.059 (0.20)	-0.043 (0.03**)	-0.019 (0.32)	0.045 (0.12)	-0.078 (0.20)	-0.022 (0.15)	0.128 (0.00***)	0.071 (0.00***)	-0.058 (0.01***)	0.149 (0.00***)	0.137 (0.00***)	-0.051 (0.07*)
EPU	0.097 (0.24)	0.028 (0.42)	0.008 (0.82)	-0.021 (0.67)	-0.166 (0.12)	-0.009 (0.73)	0.115 (0.06*)	0.127 (0.00***)	0.129 (0.00***)	0.202 (0.00***)	0.160 (0.00***)	0.130 (0.01***)
Silver Price	-0.169 (0.03**)	0.027 (0.38)	0.027 (0.37)	-0.050 (0.28)	0.224 (0.02**)	0.041 (0.10*)	-0.202 (0.00***)	-0.193 (0.99)	0.037 (0.31)	-0.255 (0.00***)	-0.303 (0.10)	-0.008 (0.86)
Dow Price	-0.021 (0.90)	-0.039 (0.55)	-0.118 (0.07*)	-0.229 (0.02**)	-0.316 (0.13)	-0.201 (0.00***)	-0.379 (0.00***)	0.001 (0.85)	-0.162 (0.04**)	-0.319 (0.01***)	0.124 (0.08*)	-0.233 (0.02**)
GDP	0.464 (0.66)	1.574 (0.00***)	1.210 (0.01***)	0.769 (0.23)	3.490 (0.01***)	1.574 (0.00***)	0.016 (0.98)	0.086 (0.00***)	2.060 (0.00)	-0.188 (0.80)	-0.870 (0.00***)	2.430 (0.00***)
R <sup>2</sup>	0.074	0.070	0.113	0.048	0.022	0.131	0.192	0.098	0.162	0.217	0.133	0.135
Rho	0.012	0.0281	0.018	0.007	0.047	0.042	0.003	0.024	0.010	0.001	0.006	0.010
F test u <sub>i</sub> =0: (p value)	0.24 (0.95)	0.55 (0.87)	0.35 (0.88)	0.13 (1.00)	0.94 (0.56)	0.83 (0.63)	0.06 (1.00)	0.46 (0.99)	0.20 (1.00)	0.01 (1.00)	0.12 (1.00)	0.19 (1.00)
N° Obs.	114	228	114	266	532	266	266	532	266	304	608	304
N° Groups	6	12	6	14	28	14	14	28	14	16	32	16

Note: \*\*\*, \*\* and \* indicate the significance at 1%, 5% and 10% levels, respectively.

#### 4. Conclusions

This study shows that EPU has a positive impact on the return of the Walking Liberty Half Dollar, especially during times of market distress. Thus, the suitability of considering investment in numismatic assets as a good investment alternative in times of greater uncertainty is evidenced.

By considering the year of minting of the coin in the above relationship, it is shown that only coins minted during the Crash of 1929 and Second World War are positively and significantly affected by EPU. Therefore, this fact evidence that only Walking Liberty Half Dollar coins minted between 1930 and 1947 can be considered safe haven assets when faced with EPU.

In addition, by including the coin quality, it is shown that inferior quality coins minted during the Second World War have a higher response to EPU. It is seen that with increases of 100% of this uncertainty from one year to the next, the returns of the coins minted between 1940 and 1947 of G-4 and VG-8 quality can increase by about 20.20%.

The findings obtained have significant implications for both individual and professional investors. The fact that the return on investment in particular collector coins respond positively to EPU highlights the importance of considering this type of asset as a safe haven in more unstable times. Thus, another interesting investment alternative arises as opposed to the traditional investment in gold or the recent consideration of cryptocurrencies. Furthermore, this issue also motivates the suitability of considering this type of asset for risk diversification in investment portfolios.

#### CRedit authorship contribution statement

**Jessica Paule-Vianez:** Conceptualization, Formal analysis, Methodology, Software, Validation, Writing – original draft. **Antonio Alcázar-Blanco:** Data curation, Investigation, Resources, Visualization. **José Luis Coca-Pérez:** Project administration, Supervision, Writing – review & editing.

#### Declaration of Competing Interest

None.

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