

## Bilateral Swap Agreements and U.S. Balance of Trade

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### Abstract

China starting in 2009 and by April 2015 has signed bilateral swap agreement with 31 countries. A bilateral swap agreement (BSA) is a trading agreement on exchanging a stipulated amount of domestic currency for a stipulated amount of a foreign currency based on a specified exchange rate within a specified period of time, and when the agreement expires, making a reverse exchange at the same exchange rate on the date specified. Such agreements, by lowering the demand for an international currency, lower its relative price and, thereby, change the balance of payments and the real income of the nation issuing the currency. Since, the U.S. dollar dominates all other international currencies in trade settlement and in reserve composition of sovereign states, such swap agreements are expected to affect U.S. dollar's exchange rate and, thereby, the U.S. balance of payments and real income. There have been several studies on the impact of these swap agreements on some aspects of national and global economy. But none of the studies, thus far, have looked into the impact of such agreement on the economy in general and on the balance of trade in particular of a third country. Therefore, our study attempts to examine the effect of China's swap agreement with Indonesia on U.S. balance of trade. We develop a model of the U.S. balance of trade, which is a function of U.S. real GDP, Indonesia's real GDP, exchange rate of U.S. dollar with Rupiah, and a swap dummy. Our study finds that the swap agreement between China and Indonesia has a positive effect on U.S. balance of trade with Indonesia. A plausible explanation for this finding is that one of the objectives of initiating such agreements by China was to meet its import need of natural resources to feed its ever expanding export sector. As expected, therefore, this swap agreement raised Indonesia's export to China faster than its export to other countries including the United States, causing a faster growth in U.S. exports to than in its imports from Indonesia, thereby, leading to a rise in U.S. balance of trade with Indonesia.

**Keywords:** bilateral swap agreement, real GDP, balance of trade

**JEL Classification:** F3

### I. Introduction

Initially aimed at bypassing the U.S. dollar in international trades and thereby keeping bilateral trades unaffected by the fluctuations in the value of the dollar, bilateral swap agreements (BSAs) may have other international economic implications as well. As one of the means of international payments – under which two trading partners agree to use each other's currency as a settlement currency – bilateral swap agreements can change the reserve composition of sovereign states changing, thereby, the dynamics of international capital movements. Moreover, swap agreements, by changing the demand for an international currency, also have the potential of changing the relative value of international currencies. This change in the relative value, in turn, can change the international flow of goods and services and, thereby, the balance of payments of sovereign states.

A typical bilateral swap agreement involves a trading agreement on exchanging a stipulated amount of domestic currency for a stipulated amount of a foreign currency based on a specified exchange rate within a specified period of time and, when the agreement expires, making a reverse exchange at the same exchange rate and for the same domestic amount on the date specified. For example, suppose the People's Bank of China (PBOC) signs a

RMB50-billion swap agreement with Bank of Japan (BOJ). Then, China will exchange RMB50 billion and receive Japanese yen within a specified period of time at a specified exchange rate. Subsequently BOJ will inject RMB50 billion and PBOC will inject the exchanged amount of yen into their own financial systems, which will be borrowed by domestic traders to pay for their imports. And when the agreement expires, PBOC and BOJ will exchange the other nation's currency for their domestic currency at the same exchange rate.

Such an arrangement (BSA) was an attractive option for a number of emerging markets, such as, South Korea, Argentina, and Indonesia who were facing short-term liquidity problem in the wake of the financial crisis as their central banks did not have enough U.S. dollar to meet the demand by their importers. These nations, therefore, had all incentive to bypass the U.S. dollar. China, on the other hand, sitting on vast amounts of foreign currency reserves, had an opportunity to enhance its capabilities of providing liquidity to world financial markets. In addition, such an agreement would also help China secure the supplies of needed natural resources (e.g. oil and minerals) for its ever expanding industrial sector. This proper match of interest initiated several bilateral swap agreements by China with several countries around the globe. As Table-1 shows, by May, 2015, China had bilateral swap agreements with 31 countries.

**Table - 1: China's Bilateral Swap Agreements with Other Countries**

S.N.	Country	Swap Agreement Date	Swap Amount (Billions of RMB)	S.N.	Country	Swap Agreement Date	Swap Amount (Billions of RMB)
1	Indonesia	Mar. 2009	100	17	Sri Lanka	Sep. 2014	10
2	Uzbekistan	Apr. 2011	0.7	18	Indonesia	Oct. 2014	360
3	UAE	Jan. 2012	35	19	Russia	Oct. 2014	150
4	Turkey	Feb. 2012	10	20	Qatar	Nov. 2014	35
5	Ukraine	Jun. 2012	15	21	Canada	Nov. 2014	200
6	Singapore	Mar. 2013	300	22	Hong Kong	Nov. 2014	400
7	Brazil	Jun. 2013	190	23	Kazakhstan	Dec. 2014	7
8	UK	Jun. 2013	200	24	Thailand	Dec. 2014	70
9	Hungary	Sep. 2013	10	25	Pakistan	Dec. 2014	10
10	Albania	Sep. 2013	2	26	Suriname	Mar. 2015	1
11	Iceland	Sep. 2013	3.5	27	Armenia	Mar. 2015	1
12	EU	Oct. 2013	350	28	Australia	Apr. 2015	200
13	New Zealand	Apr. 2014	25	29	South Africa	Apr. 2015	30
14	Argentina	Jul. 2014	70	30	Malaysia	Apr. 2015	180
15	Switzerland	Jul. 2014	150	31	Belarus	Apr. 2015	7
16	Mongolia	Aug. 2014	15				

**Source:** The People's Bank of China (<http://www.pbc.gov.cn/english/130437/index.html>)

While swap agreements greatly relieves two trading nations of the shortage of international liquidity, they have several implications for the countries issuing an international currency. Such agreements, by lowering the demand for an international currency, lower its relative price and, thereby, change the balance of payments and the real income of the nation issuing the currency. Since, the U.S. dollar dominates all other international currencies in trade

settlement and in reserve composition of sovereign states, such swap agreements are expected to affect U.S. dollar's exchange rate, and, thereby, the U.S. balance of payments and real income.

The purpose of this study is to evaluate the impact of China's swap agreements with other nations on U.S. balance of payments. One of the top 12 swap agreements China has signed is the one with Indonesia (RMB 360 billion). This study aims to evaluate the impact of China's swap agreements on U.S. balance of trade with Indonesia.

So far, studies on swap agreements have only focused on their impact on other aspects of global economy rather than on a country's balance of trade. For example, a study by Aizenman, Jinjark, and Park (2011) found that such swap agreements by China will only have limited effect in terms of establishing Renminbi (RMB) as a substitute to other reserve currencies. Another study by Liao and McDowell (2015) on the rise in swap agreements has concluded that their ability to insulate the trading nations from international liquidity shocks and reduced transaction costs of cross-border exchange for local firms are the major reasons. But Garcia-Herrero and Xia (2013) find that gravity motif is the predominant reason for the choice of swap agreements. Yelwa (2016) concludes that currency swap with China will boost the Nigerian economy. A study by Zhitao, Wenjie and Cheung (2016), on the determinants of China's bilateral local currency swap lines since the recent global financial crisis, concludes that factors such as trade intensity, economic size, strategic partnership, free trade agreement, corruption, and stability affect the decision of signing a swap line agreement. An article in The Washington Times by Alex VanNess (2014) argues that China's swap agreements with countries will make international community rely less and less on the dollar, eliminating the dollar's reserve currency status resulting in higher interest rates, a rise in prices, and a greater difficulty servicing the debts for the United States. Atkins (2016) analyzes both the benefits and dangers of Nigeria's swap agreement with China. While he sees increased trade with China as the benefit, he sees political turmoil as the danger of swap agreements with China. Durden (2014) argues that as many countries, through swap agreements, begin to reject the dollar due to the exported inflation that is growing in nations that are relegated to having to hold them for global oil purchases, alternatives such as the Chinese Yuan will become a more viable option. Murphy and Yuan (2009) see no immediate danger to the dollar from China's currency swap agreements. To them, since the United States is still the number one destination for Chinese exports and, as transactions are still denominated in dollars, the country will continue to build its dollar reserves. And given its vast holdings and limited investment options, Beijing has little choice but to continue to support the U.S. dollar.

So, none of the studies on swap agreements, thus far, has looked into the impact of such agreement on the economy of a third country. Therefore, this study will be a net addition to the literature, in it, we develop a model of the balance of trade, which is a function of U.S. real GDP, Indonesian real GDP, exchange rate of U.S. dollar with Rupiah, and a swap agreement dummy. We then empirically test the model.

This paper has been organized as following: section II lays out the model, section III explains the methodology, section IV identifies the data source, section V reports the empirical findings, and finally, section VI concludes the study.

## II. The Model

Households tend to increase their spending as their income rises. Increases in spending by households raise the demand for goods and services – produced at home and abroad, causing the nation’s imports to rise. Similarly, any rise in the exchange rate – here defined as the number of foreign currency units received by selling one unit of the domestic currency – leads to the rise in the nation’s imports by making foreign products relatively cheaper. Therefore, both the national income (real GDP) and the exchange rate enter a nation’s import function with a positive sign. On the other hand, foreigners tend to buy more of their own products plus the products produced abroad, as their income rises. Therefore, a nation’s export rises as foreigners’ income rises. Similarly, a rise in the exchange rate – as defined above – makes a nation’s products relatively expensive to foreigners leading to a fall in the nation’s exports. As such, foreign real income (GDP) and exchange rate enter a nation’s export function with a positive sign and a negative sign respectively. Arguments presented above lead to the specification of a nation’s import and export functions as following:

$$M = \alpha_0 + \alpha_1 y + \alpha_2 e + u_1 \quad (1)$$

$$X = \beta_0 + \beta_1 y_f + \beta_2 e + u_2 \quad (2)$$

where,  $M$  is the import,  $y$  is the domestic real output (gross domestic product),  $e$  is the exchange rate defined as the number of domestic currency units needed to purchase one unit of a foreign currency,  $X$  is the export, and  $y_f$  is the foreign real output (GDP), and  $\alpha_0, \alpha_1, \alpha_2, \beta_0, \beta_1,$  and  $\beta_2$  are coefficients. Subtracting equation (1) from (2) yields,

$$\text{Trade balance: } B = X - M = \beta_0 + \beta_1 y_f + \beta_2 e + u_2 - \alpha_0 - \alpha_1 y - \alpha_2 e - u_1 \quad (3)$$

Arranging terms gives,

$$B = (\beta_0 - \alpha_0) + \beta_1 y_f - \alpha_1 y + (\beta_2 - \alpha_2) e + (u_2 - u_1) \quad \text{or} \\ B = \delta_0 + \beta_1 y_f + \delta_1 y + \delta_2 e + v \quad (4)$$

Where,  $\delta_0 = (\beta_0 - \alpha_0), \delta_1 = -\alpha_1, \delta_2 = (\beta_2 - \alpha_2),$  and  $v = (u_2 - u_1).$

## III. Methodology

With a time subscript, equation (4) can be rewritten as,

$$B_t = \delta_0 + \beta_1 y_{f,t} + \delta_1 y_t + \delta_2 e_t + v_t \quad (5)$$

Here, ‘ $y_t$ ’ is U.S. real GDP in year  $t$ , ‘ $y_{f,t}$ ’ is Indonesia’s real GDP in year  $t$ ,  $e_t$  is the average exchange rate between U.S. dollar and Indonesian Rupiah in year  $t$ , and  $v_t$  is the error term. In order to analyze the effect of China’s swap agreement with Indonesia on U.S. balance of trade with Indonesia, we introduce a swap agreement dummy ( $S_t$ ) in equation (5), which takes a value of 1 for the years since China signed a swap agreement with Indonesia (i.e. 2009) and a value of 0 for all preceding years. So, we will estimate equation (5) including the swap dummy ( $S_t$ ) in it as following:

$$B_t = \delta_0 + \beta_1 y_{f,t} + \delta_1 y_t + \delta_2 e_t + \delta_3 S_t + v_t \quad (6)$$

A priori, the sign of the dummy variable cannot be predicted. This is because, a swap agreement between any two nations is expected to lower the transaction costs between the

two nations leading to a rise in both exports and imports between the two nations and a decline in both exports and imports of each of the two nations with the rest of the world. Therefore, a swap agreement between China and Indonesia is expected to lower both U.S. exports to and imports from both China and Indonesia. If proportionate decline in the exports is lower than that in the imports, then the sign of the dummy is expected to be positive, otherwise it is expected to be negative. If the null hypothesis of  $\delta_3 = 0$  is not rejected, then we will conclude that the swap agreement has not effect on U.S. balance of trade with Indonesia, whatsoever. If on the other hand, the null hypothesis of  $\delta_3 = 0$  is rejected, then a negative value of  $\delta_3$  will lead us to conclude that the swap agreement has a negative impact on U.S. balance of trade with Indonesia.

#### IV. Data

We use annual data on U.S. export, import, and balance of payments obtained from the U.S. Census Bureau, data on U.S. and Indonesia's real gross domestic product (GDP) from the World Development Indicators, and data on the average annual exchange rate of U.S. dollar with Indonesian rupiah from the Federal Reserve Bank of St. Louis for the years 1990 - 2015. The information on China's swap agreements with other countries is obtained from the People's Bank of China. All above data is shown in Appendix – D.

#### V. Empirical Findings

We estimated equation (6) and obtained the following results (the detailed regression output is given in Appendix-A):

$$B_t = -598.52 - 2.45E^{11}y_t - 3.42E^9y_{f,t} - 0.47e_t + 2420.35S_t \quad (7)$$

(0.90)      (-0.32)      (-2.77)      (-4.58)      (2.27)

$R^2 = 0.917676$ ; F-statistics = 58.52; Prob. (F-stat.) = 0.0000; Durbin-Watson Stat. = 1.0813

The numbers in parentheses are corresponding t-statistics. The  $d_L$  and  $d_U$  for 26 observations and 4 slope coefficients are 0.855 and 1.517 respectively, while the actual D-W statistic (d) is 1.0813. Thus the actual D-W statistic is greater than the  $d_L$  but less than  $D_U$ , indicating that the test is inconclusive about the presence of positive autocorrelation. On the other hand,  $(4 - d)$  is greater than  $d_U$ , which indicates that there is no negative autocorrelation. Therefore, we can safely use our estimates, presented in equation (7), to interpret our findings.

The corresponding t-statistics, given in the parentheses, show that, at 5% significance level, variables  $y_{f,t}$ ,  $e_t$ , and  $S_t$  are significant. The negative sign associated with the variable,  $y_{f,t}$ , indicates that an increase (decrease) in Indonesia's real GDP lowers (raises) the U.S. balance of trade. This finding seems counter intuitive, but is plausible, because Indonesia's economic growth is greatly influenced by its exports sector making its exports grow faster than its imports, thereby, making U.S. exports to Indonesia grow slower than its imports from Indonesia, and in turn, making U.S. balance of trade with Indonesia negatively associated with Indonesia's real GDP. A negative sign associated with the variable,  $e_t$ , implies that a rise (fall) in the exchange rate between U.S. dollar and Indonesia's rupiah – defined as number of rupiah needed to buy one U.S. dollar – indicates that as the exchange rate rises (falls), U.S. balance of trade falls (rises), which is as expected. Because, as the exchange rate rises (falls), U.S. products become more expensive (cheaper) to Indonesians and Indonesian products become cheaper (more expensive) to U.S. citizens, making U.S. exports to Indonesia fall (rise) and U.S. imports from Indonesia to rise (fall), in turn, making U.S. balance of trade with Indonesia fall (rise). The swap variable,  $S_t$ , is significant and has a

positive sign indicating that the Indonesia’s swap agreement with China has a positive impact on U.S. balance of trade with Indonesia, which seems counter intuitive, because the swap agreement was supposed to have a positive impact on Indonesia’s exports to and imports from China and a negative impact on its exports to and imports from rest of the world including the U.S. But such a finding is not impossible if Indonesia’s swap agreement with China makes Indonesia’s exports to China grow faster than its imports from China, making Indonesia’s exports to the U.S. grow slower than its imports from the U.S. To verify this result, we estimated equation (1) and (2), with the “swap” dummy included, as following (the detailed regression output is given in Appendix – B & C):

$$M_t = 2357.63 + 3.00E^{10}y_t + 0.67e_t + 3497.09S_t \quad (8)$$

(2.30)      (3.25)      (5.75)      (3.14)

$R^2 = 0.886798$ ; F-statistics = 57.45; Prob. (F-stat.) = 0.0000; Durbin-Watson Stat. = 1.5084

$$X_t = 944.23 + 3.42E^9y_t - 0.24e_t + 963.91S_t \quad (9)$$

(2.32)      (6.61)      (-4.27)      (1.59)

$R^2 = 0.931490$ ; F-statistics = 99.71; Prob. (F-stat.) = 0.0000; Durbin-Watson Stat. = 1.5134  
 The Durbin-Watson statistics for 26 observations and 3 slope coefficients indicate that there is no positive or negative autocorrelation in the error term of both of the above – import and export – functions. The t-statistics associated with “swap” dummy in equation (8) and (9) indicate that China’s swap agreement with Indonesia has positively affected U.S. export to Indonesia but has no effect on U.S. import from Indonesia. This finding supports our result in equation (7) as to why U.S. balance of trade with Indonesia has been positively affected by China- Indonesia swap agreement. This is because, one of the purpose of China’s swap agreements with other countries is to satisfy China’s increasing appetite for natural resources to feed its export-led economy making exports to China from swap partners grow faster than their exports to other countries including the U.S.

## VI. Summary and Conclusion

A bilateral swap agreement (BSA) is a trading agreement on exchanging a stipulated amount of domestic currency for a stipulated amount of a foreign currency based on a specified exchange rate within a specified period of time, and when the agreement expires, making a reverse exchange at the same exchange rate on the date specified. Such an arrangement (BSA) was an attractive option for a number of emerging markets, such as, South Korea, Argentina, and Indonesia who were facing short-term liquidity problem, in the wake of the financial crisis that occurred in 1997, as their central banks did not have enough U.S. dollar to meet the demand by their importers. These nations, therefore, had all incentive to bypass the U.S. dollar. China, on the other hand, sitting on vast amounts of foreign currency reserves, had an opportunity to enhance its capabilities of providing liquidity to world financial markets in an effort to internationalize its currency. In addition, such an agreement would also help China secure the supplies of needed natural resources (e.g. oil and minerals) for its ever expanding industrial sector. This proper match of interest initiated several bilateral swap agreements by China with a number of countries around the globe.

Such agreements, by lowering the demand for an international currency, lower its relative price and, thereby, change the balance of payments and the real income of the nation issuing the currency. Since, the U.S. dollar dominates all other international currencies in trade settlement and in reserve composition of sovereign states, such swap agreements are expected



to affect U.S. dollar's exchange rate and, thereby, the U.S. balance of payments and real income.

Therefore, the purpose of this study was to evaluate the impact of China's swap agreements with other nations on U.S. balance of trade. One of the top 12 swap agreements China has signed is the one with Indonesia (RMB 360 billion). This study aims to evaluate the impact of China's swap agreements on U.S. balance of trade with Indonesia. There have been several studies on the impact of these swap agreements on some aspects of national and global economy. But none of the studies, thus far, have looked into the impact of such agreement on the economy of a third country. Therefore, this study will be a net addition to the literature, in it, we develop a model of the U.S. balance of trade, which is a function of U.S. real GDP, Indonesia's real GDP, exchange rate of U.S. dollar with Rupiah, and a swap dummy (which takes a value of 1 for the years since 2008 – the year China signed a swap agreement with Indonesia – and a value of zero otherwise).

Our study found that the swap agreement between China and Indonesia had a positive effect on U.S. balance of trade with Indonesia. A plausible explanation for this finding is that one of the objectives of initiating such agreements by China was to meet its import need of natural resources to feed its ever expanding export sector. As expected, therefore, the swap agreement raised Indonesia's export to China faster than its export to other countries including the United States, causing a faster growth in U.S. exports to than in its imports from Indonesia, thereby, leading to a rise in U.S. balance of trade with Indonesia.

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## Appendices

### Appendix-A

Dependent Variable: USBOT ( $B_t$ )

Method: Least Squares

Date: 10/29/16 Time: 06:00

Sample (adjusted): 1 26

Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	598.5164	668.9655	0.894690	0.3811
USGDP or ( $y_t$ )	-2.45E-11	7.66E-11	-0.319813	0.7523
INDGDP or ( $y_{f,t}$ )	-3.42E-09	1.23E-09	-2.773329	0.0114
EXCH or ( $e_t$ )	-0.468571	0.102236	-4.583232	0.0002
SWAP or ( $S_t$ )	2420.349	1065.243	2.272109	0.0337
R-squared	0.917676	Mean dependent var		-7248.662
Adjusted R-squared	0.901995	S.D. dependent var		3293.601
S.E. of regression	1031.086	Akaike info criterion		16.88565
Sum squared resid	22325897	Schwarz criterion		17.12760
Log likelihood	-214.5135	Hannan-Quinn criter.		16.95532
F-statistic	58.52233	Durbin-Watson stat		1.081266
Prob(F-statistic)	0.000000			

$d_L = 0.855$ ;  $d_U = 1.517$  for  $n = 26$  and  $k' = 4$ .

### Appendix-B

Dependent Variable: USIMP ( $M_t$ )

Method: Least Squares

Date: 11/02/16 Time: 04:04

Sample: 1 26

Included observations: 26

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2357.628	1026.783	2.296131	0.0316
USGDP ( $y_t$ )	3.00E-10	9.24E-11	3.247995	0.0037
EXCH ( $e_t$ )	0.671102	0.116648	5.753202	0.0000
SWAP ( $S_t$ )	3497.087	1115.460	3.135108	0.0048
R-squared	0.886798	Mean dependent var		11430.97
Adjusted R-squared	0.871361	S.D. dependent var		5044.734
S.E. of regression	1809.359	Akaike info criterion		17.97997
Sum squared resid	72023124	Schwarz criterion		18.17352
Log likelihood	-229.7396	Hannan-Quinn criter.		18.03571
F-statistic	57.44742	Durbin-Watson stat		1.508365
Prob(F-statistic)	0.000000			

$d_L = 0.928$ ;  $d_U = 1.410$  for  $n = 26$  and  $k' = 3$ .



**Appendix-C**

Dependent Variable: USEXP ( $X_t$ )

Method: Least Squares

Date: 11/02/16 Time: 04:51

Sample (adjusted): 1 26

Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	944.2337	407.7853	2.315516	0.0303
INDGDP ( $y_{f,t}$ )	3.42E-09	5.17E-10	6.606909	0.0000
EXCH ( $e_t$ )	-0.237142	0.055593	-4.265671	0.0003
SWAP ( $S_t$ )	963.9097	606.2680	1.589907	0.1261
R-squared	0.931490	Mean dependent var		4182.315
Adjusted R-squared	0.922148	S.D. dependent var		2252.624
S.E. of regression	628.5276	Akaike info criterion		15.86528
Sum squared resid	8691034.	Schwarz criterion		16.05883
Log likelihood	-202.2486	Hannan-Quinn criter.		15.92101
F-statistic	99.70699	Durbin-Watson stat		1.513435
Prob(F-statistic)	0.000000			

$d_L = 0.928$ ;  $d_U = 1.410$  for  $n = 26$  and  $k' = 3$ .

Appendix-D

Table - 3: U.S. Export, Import, and Balance of Trade with Indonesia							
Year	U.S. Export (millions \$)	U.S. Import (millions \$)	U.S. Balance of Trade (millions \$)	U.S. GDP (\$)	Indonesian GDP (\$)	Exchange Rate (Rupiah/\$)	Swap Dummy
1990	1,897	3.34E+03	-1443.8	5.98E+12	5.25E+11	1,858.00	0
1991	1,892	3.24E+03	-1349.1	6.17E+12	5.91E+11	1,961.50	0
1992	2,779	4.53E+03	-1750.1	6.54E+12	6.48E+11	2,037.50	0
1993	2,770	5.44E+03	-2665.1	6.88E+12	7.12E+11	2,094.25	0
1994	2,809	6.55E+03	-3738.1	7.31E+12	7.82E+11	2,171.00	0
1995	3,360	7.44E+03	-4075.7	7.66E+12	8.65E+11	2,262.00	0
1996	3,977	8.25E+03	-4273.2	8.10E+12	9.48E+11	2,350.50	0
1997	4,522	9.19E+03	-4666.1	8.61E+12	1.01E+12	3,198.50	0
1998	2,299	9.34E+03	-7041.6	9.08917	8.86E+11	10,487.50	0
1999	2,038	9.53E+03	-7487.1	9.66062	9.07E+11	7,720.50	0
2000	2,402	1.04E+04	-7965.2	1.03E+13	9.73E+11	8,675.00	0
2001	2,521	1.01E+04	-7583	1.06218	1.03E+12	10,478.75	0
2002	2,556	9.64E+03	-7087.6	1.10E+13	1.09E+12	9,085.00	0
2003	2,516	9.52E+03	-6998.7	1.15E+13	1.17E+12	8,511.75	0
2004	2,671	1.08E+04	-8139.1	1.23E+13	1.26E+12	9,115.50	0
2005	3,054	1.20E+04	-8960.4	1.31E+13	1.38E+12	9,833.25	0
2006	3,079	1.34E+04	-10346.2	1.39E+13	1.50E+12	9,157.50	0
2007	3,970	1.43E+04	-10331.6	1.45E+13	1.64E+12	9,182.00	0
2008	5,645	1.58E+04	-10154.7	1.47E+13	1.77E+12	9,692.50	0
2009	5,107	1.29E+04	-7831.6	1.44E+13	1.86E+12	10,220.25	1
2010	6,948	1.65E+04	-9530.5	1.50E+13	2.00E+12	9,028.25	1
2011	7,421	1.91E+04	-11689.5	1.55E+13	2.17E+12	8,799.25	1
2012	7,998	1.80E+04	-10004.2	1.62E+13	2.34E+12	9,479.50	1
2013	9,107	1.89E+04	-9765.1	1.67E+13	2.52E+12	10,862.50	1
2014	8,283	1.94E+04	-11107.3	1.73E+13	2.69E+12	12,006.25	1
2015	7,121	1.96E+04	-12480.6	1.79E+13	2.84E+12	13,333.33	1
<p><b>Source:</b> (1) U.S. Census Bureau (<a href="https://www.census.gov/foreign-trade/balance/c5600.html">https://www.census.gov/foreign-trade/balance/c5600.html</a>);                      (2) World Development Indicators (<a href="http://data.worldbank.org/data-catalog/world-development-indicators">http://data.worldbank.org/data-catalog/world-development-indicators</a>);                      (3) Economic Research, Federal Reserve Bank of St. Louis (<a href="https://fred.stlouisfed.org/series/CCUSSP02IDQ650N">https://fred.stlouisfed.org/series/CCUSSP02IDQ650N</a>)</p>							
<p><b>Note:</b> GDP is measured as GDP, PPP (Current international \$).</p>							

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