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ПЕРЕНОС ВАЛЮТНОГО КУРСА НА ИНФЛЯЦИЮ В США: В МАСШТАБАХ ВСЕЙ ЭКОНОМИКИ И В СЕЛЬСКОМ ХОЗЯЙСТВЕ¹

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Приведены данные с 1970 по 2022 г. о низком переносе обменных курсов на внутренние цены в Соединенных Штатах как в сельском хозяйстве, так и в экономике в целом. Эффект переноса обменного курса определяется как степень, в которой изменение обменного курса приводит к изменению внутренних цен. Рассматривается влияние обменного курса на внутренние цены производителей и потребителей. Поскольку продовольственная инфляция является одной из основных проблемных областей, а торговля играет непропорционально важную роль в сельском хозяйстве США, авторами было исследовано влияние обменного курса на цены на сельскохозяйственную продукцию, а также на цены в экономике в целом. Авторская стратегия оценки не использует перекрестные изменения, а использует изменения во времени индексов обменного курса и индексов цен. Большинство оценок эффекта переноса незначительно отличаются от нуля, поэтому почти всегда можно отвергнуть гипотезу о полном переносе. Выводы, сделанные авторами, показывают, что любое дальнейшее повышение стоимости доллара США мало повлияет на уровень инфляции в Соединенных Штатах, в сельском хозяйстве или экономике в целом.

Ключевые слова: валютные курсы, инфляция, эффект переноса, индексы цен, сельское хозяйство, США.

LOW EXCHANGE RATE PASS-THROUGH IN THE UNITED STATES, ECONOMY- WIDE AND IN AGRICULTURE²

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We provide evidence of low pass-through of exchange rates into domestic prices in the United States, both within agriculture and economy-wide, from 1970 to 2022. Exchange rate pass-through

¹ Авторы внесли равноценный вклад в создание публикации. Авторы выражают благодарность Феликсу Бакедано за ценные комментарии и предложения. Выводы, сделанные в данной статье, отражают субъективную позицию авторов и не могут трактоваться как официальная позиция Министерства сельского хозяйства США или Правительства США. Исследование было поддержано Службой экономических исследований Министерства сельского хозяйства США.

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is defined as the extent to which a change in exchange rates translates into a change in domestic prices. We revisit the question of exchange rate pass-through into domestic producer and consumer prices. With food inflation being one of the major areas of concern, and with trade playing a disproportionately important role in U.S. agriculture, we also investigate exchange rate pass-through for agricultural prices as well as for prices in the general economy. Our estimation strategy does not use cross-sectional variation, but instead exploits variation over time in exchange rate indices and price indices. Most of our estimates of pass-through are not significantly different from zero, and we are almost uniformly able to reject the hypothesis of complete pass-through. Our findings suggest that any further increases in the value of the U.S. dollar will have little effect on inflation rates in the United States, in agriculture or economy-wide.

Keywords: exchange rates, inflation, pass-through, price indices, agriculture, the United States.

Introduction

In the United States, inflation has recently hit a historic 40-year high¹, affecting many daily necessities including food, transportation, and housing. Previously, inflation remained relatively low, especially compared to the era of the 1970s and 1980s, despite economic expansion and low unemployment levels that used to be associated with higher inflation. This recent spike prompts a question of whether we might be seeing a reversal of trends in regards to factors related to inflation, such as the relation between exchange rates and prices. We revisit the question of exchange rate pass-through into domestic producer and consumer prices. With food inflation being one of the major areas of concern, and with trade playing a disproportionately important role in U.S. agriculture¹, we also investigate exchange rate pass-through for agricultural prices as well as for prices in the general economy.

Exchange rate pass-through is the extent to which a change in the exchange rate translates into a change in domestic prices. In the absence of any policy distortions or market imperfections, pass-through of exchange rate fluctuations into domestic prices of imported goods is complete – meaning, for example, that a 10% stronger U.S. dollar translates into U.S. imports being 10% cheaper. However, a large empirical literature suggests that pass-through into import prices is in fact incomplete for many countries, especially the U.S., meaning that a 10% stronger dollar translates into U.S. imports being less than 10% cheaper². Moreover, due to the fact that many goods in the U.S. are produced domestically rather than imported, pass-through of exchange rate

¹ According to [4], prices overall increased 9.1 percent, while prices for food increased by 10.4 percent over the last 12 months since June 2022, the largest increase for both since 1981.

² In the United States in 2020, imports of agricultural goods were 14.3 percent of total agricultural GDP, compared with 10.8 percent for imports of non-agricultural goods as a percent of total non-agricultural GDP. Source: authors' calculations using data from [22], and the Trade Profile for the United States from [26].

² See, for example, [6]. We provide a more thorough review of the literature in section 1.1.

fluctuations into general indices of U.S. producer or consumer prices is even more incomplete.

Exchange rate pass-through has long been a topic of intense interest from academics, forecasters, and policymakers. Low pass-through indicates a lack of efficiency in the world trading arena [15], but allows for greater scope for domestic monetary policy effectiveness [6]. With the U.S. dollar continuing to appreciate, an important question is the extent to which this dollar appreciation can curb inflation, measured by changes in the consumer price index. High exchange rate pass-through would indicate that a stronger U.S. dollar and therefore cheaper imports would lead to disinflation due to the substitution from domestic goods to import goods. Conversely, incomplete or zero exchange rate pass-through would lead to small to no changes in domestic prices and inflation despite a stronger dollar¹.

Previous studies in agricultural trade investigate exchange rate pass-through into specific crops or inputs and mostly find evidence of low pass-through, although some studies remain mixed [2; 11]. In this paper, we aim to determine whether previous product-specific findings of low exchange rate pass-through hold in agriculture more broadly by analyzing pass-through into two broad agricultural price indices – the prices received index from the National Agricultural Statistics Service (NASS) and the food consumer price index (food CPI) – using an agricultural trade-weighted exchange rate index. We examine changes over time in exchange rate pass-through, from 1970 to 2022, using rolling window regressions, as well as regressions computed separately for different four-year time bins. We control for changes in wages or producer prices, depending on the specification, following standard practice in the literature [5].

Consistent with the majority of crop-specific studies, our estimates of exchange rate pass-through into both the food CPI and the agricultural prices received index are remarkably low throughout the sample period, with estimates often not significantly different from zero. To put these findings into broader context, we compare our agricultural estimates to exchange rate pass-through into the general producer price index and consumer price index (PPI and CPI, respectively), using a general U.S. trade-weighted exchange rate index. For the general case, we also find low pass-through into CPI and PPI, which follows findings from previous macroeconomic literature [5].

The remainder of the paper is structured as follows. We start with a review of the literature in section 1.1. Section 2 gives an overview of the data.

¹ During the previous era of low inflation, much of the literature focused on import prices and exchange rates to help explain the coexistence of low inflation and economic expansion. A significant portion of the decline in inflation in the U.S. in the late 1990s is attributed to the disinflationary impact of exchange rate appreciation and import price deflation [18].

Section 3 explains our empirical methodology for estimating exchange rate pass-through, as well as a brief discussion of statistics from the Dickey Fuller and Phillips-Perron unit root tests. Our estimates are presented in section 4, and section 5 concludes.

Literature Review

A number of studies examine the relation between exchange rate fluctuations and agricultural trade, including pass-through of exchange rates into agricultural prices, in the context of specific crops or inputs into agricultural production. At least one study finds evidence of significant passthrough. In particular Jean Philippe Gervais and Naceur Khraief [11], find that exchange rate fluctuations have significant effects on prices and quantities of Canadian pork imports from the U.S. and Japan.

However, most of this literature either finds pass-through to be low or finds mixed evidence. Felix G. Baquedano and William M. Liefert [2] provide evidence of low transmission of changes in exchange rates into urban market prices of wheat, rice, maize, and sorghum in a number of developing countries. Jeff Luckstead [16] finds that, on average, fluctuations in exchange rates do not have a significant effect on U.S. cocoa import volumes, although he finds a mix of significant and insignificant effects when allowing for asymmetries across trading partners and asymmetries between dollar appreciation vs. depreciation. Emi Nakamura and Dawit Zerom [19] estimate marginal cost pass-through in the U.S. coffee industry, which they argue allow for direct inferences on exchange rate pass-through. They find pass-through to be small (around one-tenth) in the short run, and still incomplete (but larger, around one-third) in the long run (six quarters). Taylor Wiseman, Jeff Luckstead and Alvaro Durand-Morat [24] find, in general, low exchange rate pass-through in the rice industry in Southeast Asia, attributing this to the prevalence in their empirical setting of non-profit-maximizing state trading enterprises. Miao Xu and David Orden [27] look at exchange rate pass-through in the U.S. and Canada for five agricultural outputs (wheat, soybeans, corn, and feeder and slaughter steers) and four inputs (fertilizer, pesticides, oil, and machinery). They find larger pass-through for outputs than for inputs, with no significant pass-through for farm machinery. Osei Yeboah, Saleem Shaik and Albert Allen [28] estimate pass-through of U.S.-Mexico exchange rates into U.S. prices of four agricultural inputs (fertilizer, chemicals, machinery, and feed). They find that pass-through is limited for all four inputs, even after four quarters.

The fact that prior estimates of crop- and input-specific estimates of exchange rate pass-through are mostly but not always low raises the question of whether this may hold true more broadly. In this paper we provide

evidence that suggests that it does, by examining pass-through into general indices of agricultural prices. To our knowledge, our paper is the first to do so.

This generalization of previous findings in agriculture connects our paper with a macroeconomic literature that finds low exchange rate pass-through for developed countries, especially the United States [12, 18], with various explanations proposed. David C. Parsley and Helen A. Popper [21] argue that low observed pass-through is due in part to endogenous responses by central banks to exchange rate fluctuations. Gita Gopinath, Oleg Itskhoki, and Roberto Rigobon [13] emphasize the fact that many international transactions are priced in U.S. dollars, and hence are unaffected by changes in U.S. exchange rates. Moreover, until recently, inflation was low for most developed countries, and one important implication of a broad class of menu cost models is that in a low inflation environment, firms have little incentive to change prices in response to most shocks, including shocks to exchange rates [14]. Similarly, Jeannine Bailliu, Wei Dong, and John Murray [1] attribute low pass-through in the U.S. to low and stable inflation and credible monetary policy. They also argue that greater openness of the U.S. economy leads to increased competition among retailers, including additional foreign retailers, which also leads to low pass-through as retailers absorb fluctuations into their margins.

Some recent studies suggest that exchange rate pass-through is declining over time, particularly in regards to pass-through into import prices or for developing countries [1; 17]. Martina Jašová, Richhild Moessner and Eó'd Takáts [14] find that passthrough after the 2008 financial crisis decreased in emerging economies due to declining inflation, and remained low and stable for advanced economies. However, José Manuel Campa, Linda S. Goldberg [6; 7] find increases over time in pass-through of exchange rates into consumption prices, due to increases in the usage of imported inputs¹. This motivates our usage of rolling regressions, which allow us to detect changes over time in the extent of exchange rate pass-through, although we do not find evidence of significant upward or downward trends. While the aforementioned studies find higher pass-through into import prices, they find low or no pass-through for the U.S. general CPI². This accords with our finding that exchange rate pass-through into CPI is for the most part statistically indistinguishable from zero, for nearly the entire sample period, across a multitude of specifications. Note that since our data span from 1970 to 2022,

¹ This echoes earlier work that compared across industries and found that exchange rate pass-through is higher in industries that rely more on imported inputs [9, 10].

² This failure of higher pass-through into import prices to translate into pass-through into consumer prices is consistent with earlier literature such as [25].

we are able to examine this question with a longer time frame than prior work, and we also document that pass-through in agriculture is similarly low as it is in the broader economy.

Data

To measure the change in exchange rates relevant to the U.S. economy, a standard approach is to look at an index of bilateral exchange rates, weighted by import volume for agricultural or general goods. The import indices come from [8] Agricultural Exchange Rate Data Set for Real Monthly Commodity Exchange Rates. We use the importer-weighted agricultural exchange rate index for agricultural goods and the competitor-weighted merchandise exchange rate index for all goods. The data product does not include an importer-weighted index for merchandise, so the competitor-weighted index was the closest substitute. Export-weighted exchange rate indices for both agriculture and merchandise and competitor-weighted agricultural exchange rate index is also available in the data set, and used in subsequent robustness checks.

After obtaining a measure of exchange rate fluctuation, we then use price indices for agricultural and general goods to analyze the pass-through of exchange rates into prices. We use two types of price indices, the Consumer Price Index (CPI) and the Producer Price Index (PPI), with agricultural and general specifications. For general CPI, the CPI-U measures the average change in prices over time for all items in the U.S. city average, all urban consumers, not seasonally adjusted. For agricultural CPI, we decided that food CPI was the closest match. Food CPI measures all food items in the U.S. city average, all urban consumers, not seasonally adjusted. PPI measures the producer price index commodity data for all commodities, not seasonally adjusted. The data for general CPI, food CPI, and PPI come from [3]. The agricultural PPI is an index for prices received for approximately 100 livestock and crop commodities, published by [20] (NASS).

We include wage data for some regressions as a control variable, following specifications from Burstein and Gopinath (2014). For economy-wide wage data, we use the data series Compensation of Employees, Received: Wage and Salary Disbursements [23]. The data is in units of billions of dollars and seasonally adjusted annual rate and provided at a monthly frequency. Agricultural wages come from the National Agricultural Statistics Service.

All of the data used in the regression have a monthly frequency. Figure 1 plots the various variables. The two agricultural and merchandise exchange rate indices are quite similar to each other. CPI and Food CPI also look very similar. PPI and agricultural PPI both increase steadily, with similar fluctuations over the years, although agricultural PPI increases at a lower rate.

Finally, wages and agricultural wages both increase steadily over the years, growing very close together particularly for the last 5–10 years of our data.

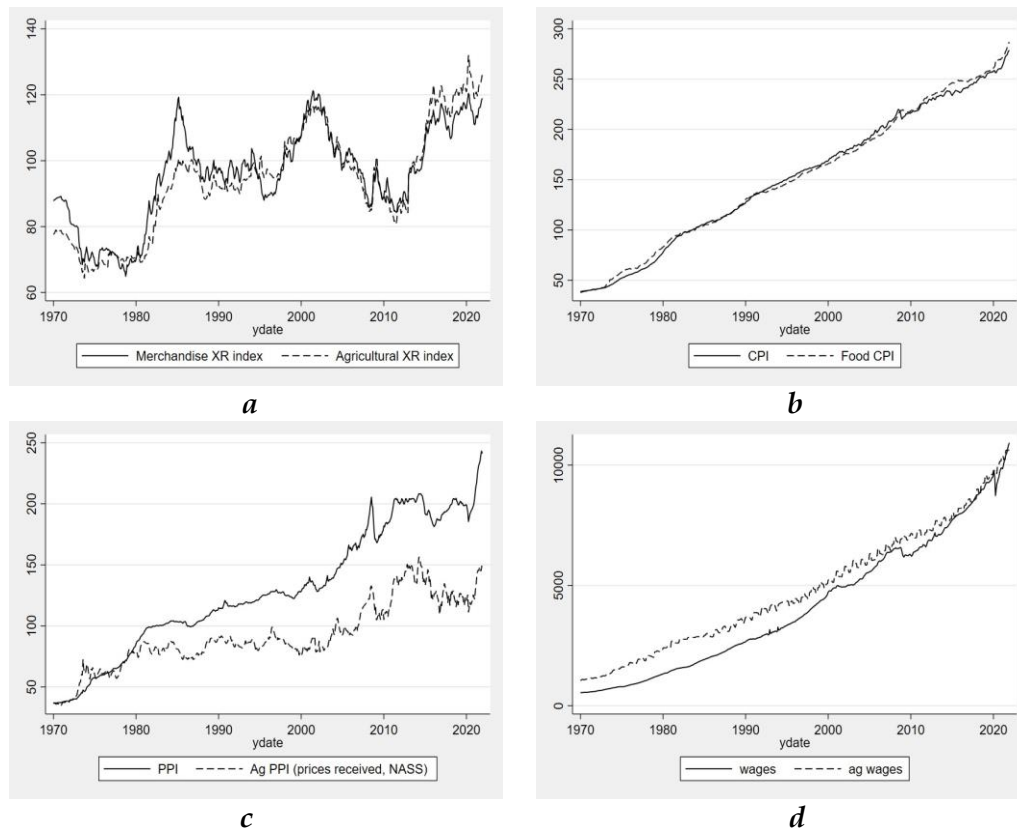


Figure 1. Plots of each of the variables in our regressions, all for the United States: CPI, food CPI, and PPI (from BLS), wages (from FRED), wages in agriculture (from NASS), agricultural PPI (more specifically, the prices received index from NASS), and the USDA's merchandise (merch) and agricultural (ag) exchange rate indices

Empirical Methodology

Main Methodology

Given the long time span of our data (more than 50 years), and given that some of the prior literature has found changes over time in exchange rate pass-through (as discussed in section 1.1), our baseline methodology for estimating pass-through is to use rolling regressions, since these allow for changes over time in the estimated amount of pass-through. Rolling regressions of the following form are estimated using a rolling window of ten years:

$$\Delta p_t = a + \sum_{k=0}^T \beta_k \Delta e_{t-k} + \gamma \Delta X_t + \epsilon_t, \quad (1)$$

where a is the constant, Δp_t denotes log changes in a U.S. domestic price index (CPI, food CPI, PPI, or NASS prices received index), Δe_{t-k} denotes log changes in a U.S. real exchange rate index (merchandise or agricultural), and ΔX_t

denotes log changes in a control variable (PPI, NASS prices received index, wages, or agricultural wages). In our baseline specification, $T = 11$; that is, one year of lagged log changes in exchange rates are included, consistent with specifications from prior literature (Burstein and Gopinath (2014)). $\hat{\beta}_0$ is our estimate of short-run (that is, contemporaneous) pass-through, while $\sum_{k=0}^T \hat{\beta}_k$ captures long-run pass-through.

In order to examine economy-wide pass-through, the merchandise exchange rate index is the independent variable when the dependent variable is CPI or PPI. In order to examine pass-through within agriculture, the agricultural exchange rate index is the independent variable when the dependent variable is the food CPI or the NASS prices received index.

In order to examine pass-through into consumer prices, PPI is used as a control variable when the dependent variable is CPI, and the NASS prices received index is used as a control variable when the dependent variable is food CPI. In order to examine pass-through into producer prices, economy-wide wages are controlled for when the dependent variable is PPI, and agricultural wages are controlled for when the dependent variable is the NASS prices received index.

For robustness, we also run regressions in which the data are separated into different time bins, as an alternative to a rolling window. These regressions take the following form:

$$\Delta p_t = \sum_{h=1}^H 1\{t \in \tau_h\} [\alpha_h + \sum_{k=0}^T (\beta_{hk} \Delta e_{t-k} + \gamma_h \Delta X_t)] + \epsilon_t, \quad (2)$$

where the time span of the data is divided into H equal-sized bins, with the set τ_h denoting the h th bin in chronological order, and the rest of the notation is the same as above. For each span of time captured by bin h , $\hat{\beta}_{h0}$ is our estimate of short-run pass-through, while $\sum_{k=0}^T \hat{\beta}_{hk}$ is our estimate of long-run pass-through.

Unit Root Tests

As a first step in the empirical model, we run a series of unit root tests for each model specification to test for stationarity in the time series variables. Our choice of tests are the Dickey-Fuller (DF) and Phillips-Perron (PP) unit root tests. The null hypothesis implies the existence of a unit root, and if it is not rejected, suggests that we take first differences of our variables to address issues of non-stationarity.

When running these tests on the residuals of our regressions in levels, the null hypothesis of a unit root is not rejected, suggesting our variables of interest in levels are non-stationary but could be cointegrated. However, when running the DF and PP tests on the residuals of our regressions in first differences, as specified previously in section 3.1, the null hypothesis of the existence of a unit root is rejected, with the t-statistics reported in Table 1. This holds true for various lag specifications, and the t-statistic was highly significant each time, rejecting the null hypothesis of the existence of a unit root regardless of number

of lags, predicted residual or dependent variable, and type of dependent variable. Both tests also gave roughly similar t-statistics.

Test statistics from Dickey-Fuller & Phillips-Perron tests on baseline regression specifications

Specification	Dickey-Fuller	Phillips-Perron
	test statistic	test statistic
CPI, residual	-14.962	-15.166
CPI, predicted	-17.077	-17.535
PPI, residual	-17.482	-17.793
PPI, predicted	-14.862	-16.113
NASS, residual	-19.187	-19.043
NASS, predicted	-14.761	-15.869
Food CPI, residual	-18.264	-18.621
Food CPI, predicted	-17.491	-18.671

Note: For both tests, null hypothesis is that there is a unit root; critical values: 1%, -3.43; 5%, -2.86; 10%, -2.57. Results robust to various lag structures and to running these tests on each of the (first-differenced) variables individually.

Analysis: Estimates of exchange rate pass-through Figures 2 and 4 plot our baseline estimates of exchange rate pass-through, using rolling regressions with a 10-year rolling window, the specification of these regressions given in Equation 1. Note that in the right-hand side of each of these regressions, log changes in a real exchange rate index are used, and if pass-through from real exchange rates into domestic prices is β , the implied pass-through from nominal exchange rates into domestic prices is $\frac{\beta}{1-\beta}$. This means that in the specification given by Equation 1, complete pass-through corresponds to a β of 0.5.

Short-run pass-through

Figure 2 plots our baseline estimates of short-run (contemporaneous) pass-through. Passthrough of the U.S. agricultural real exchange rate index into the food CPI is plotted in Figure 2a. We are unable to reject the null hypothesis that pass-through is zero at the 5% significance level throughout most of the sample period, except for a few months during which the 95% confidence interval dips slightly below zero. We do not find complete pass-through throughout the entire sample period as the confidence interval never rises above 0.1 or drops below -0.2, so complete pass-through is rejected throughout the entire sample period.

Short-run pass-through of the U.S. merchandise real exchange rate index into the CPI is plotted in Figure 2b. Our estimate of pass-through is slightly statistically significantly below zero during the 1980s, statistically indistinguishable from zero during the 90s, then gradually decreases during the 2000s and increases during the 2010s, reaching a trough of around -0.1 during 2010. Complete pass-through is rejected throughout the entire sample period.

Figure 2c plots short-run pass-through from the U.S. agricultural real exchange rate index into the agricultural prices received index from NASS.

Our estimates are statistically indistinguishable from zero throughout the entire sample period. However, the 95% confidence interval is consistently wide enough that we cannot rule out sizable pass-through for most of the sample period. In fact, during the mid-2000s we cannot rule out complete pass-through (which, as noted above, corresponds to $\beta = 0.5$).

Short-run pass-through from the U.S. merchandise real exchange rate index to the PPI is plotted in Figure 2d. Our estimates are statistically indistinguishable from zero during most of the sample period, except during 2016 when the lower bound of the 95% interval is around 0.1. We can rule out complete pass-through during most of the sample period, the exception being 2009 when pass-through spikes upward.

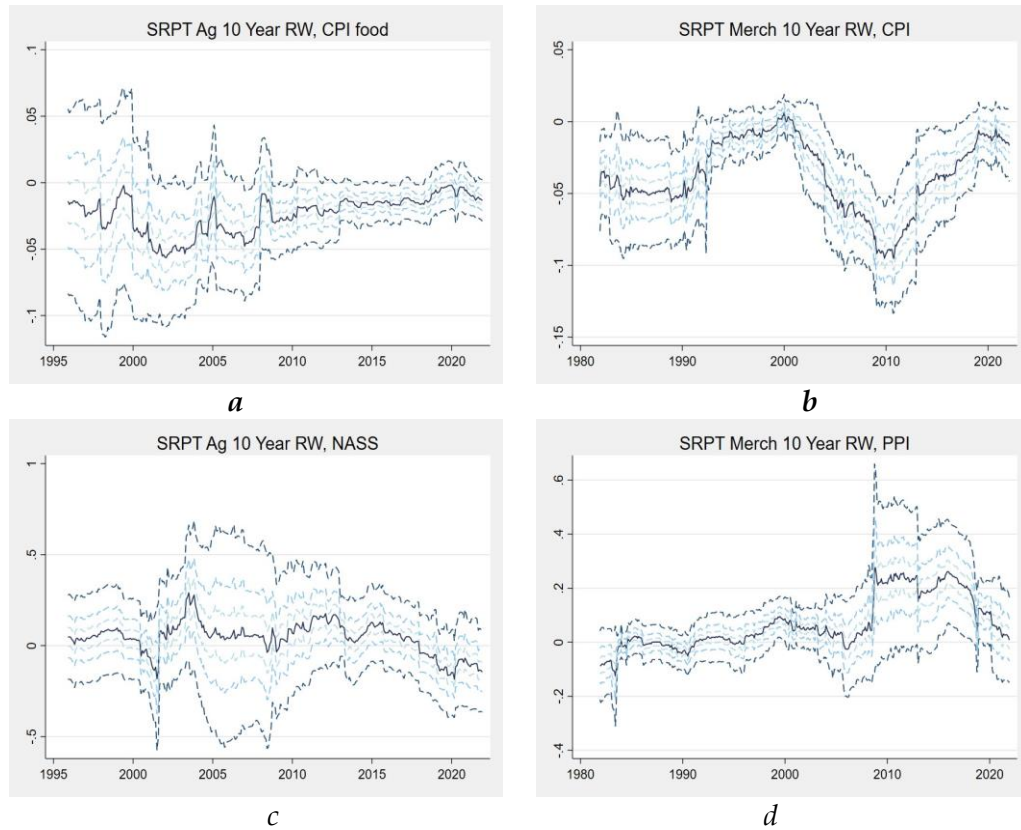


Figure 2. Short-run (contemporaneous) pass-through using 10 year rolling window regressions, with one-year lags, for the U.S. merchandise and agricultural real exchange rate indices, monthly data, and log differencing all variables. Controls changed according to dependent variables: PPI for CPI, wage for PPI, NASS prices received index for food CPI, and ag wages for the NASS price index. Dashed lines are 95%, 66%, and 33% confidence intervals, with standard errors calculated using the Newey-West (1987) HAC estimator. Note that if pass-through from real exchange rates into domestic prices is β , the implied pass-through from nominal exchange rates into domestic prices is $\frac{\beta}{1-\beta}$

Long-run pass-through

Figure 3a plots our estimates of long-run (2 years) pass-through from the U.S. agricultural real exchange rate index to the food CPI. From 1995 to 2009 pass-through was not statistically different from zero. Since 2009 pass-through has been statistically significantly positive, but still very small, between 0.005 and 0.015.

Long-run pass-through from the U.S. merchandise real exchange rate index to the CPI is plotted in Figure 3b. The estimates are not statistically significantly different from zero during most months, except for a few months in which the estimate is statistically significantly below zero, but very small in magnitude (never greater than 0.01 in absolute value).

In figure 3c, our estimates of pass-through are significantly positive at the beginning of the sample period in the 1990s, statistically indistinguishable from zero in the 2000s, and positive again after around 2010 for most of the sample period.

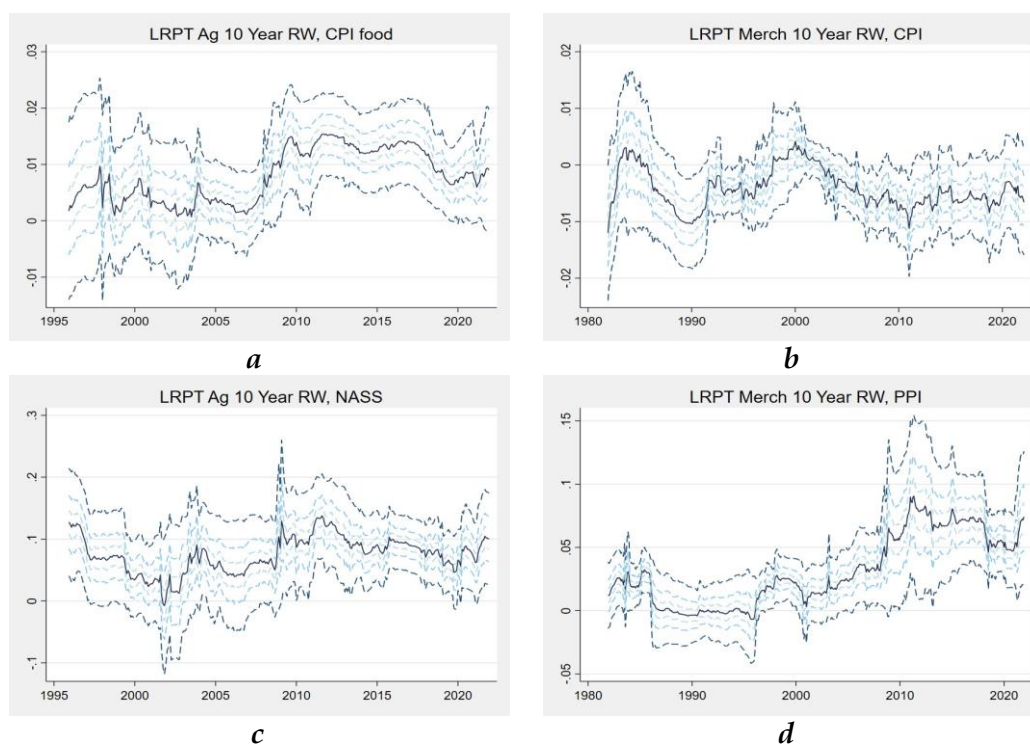


Figure 3. Long-run (one year) pass-through using 10 year rolling window regressions, other specifications same as previous

Long run pass-through for the U.S. merchandise real exchange rate index into the PPI in figure 3d follows a similar trend to the prior long run pass-through estimates, with some significantly positive estimates but mostly

estimates that are statistically indistinguishable from zero prior to 2010, and statistically significant and positive estimates afterwards until the end of the sample period.

Robustness

Figure 4 plots the short run pass-through coefficients when running regressions on different time bins of 4-year intervals, following the specifications of 2. pass-through is mostly statistically insignificant at the 5% level across all four specifications. We observe a brief exception in the late 2000's where pass-through is negative for general CPI in figure 4b.

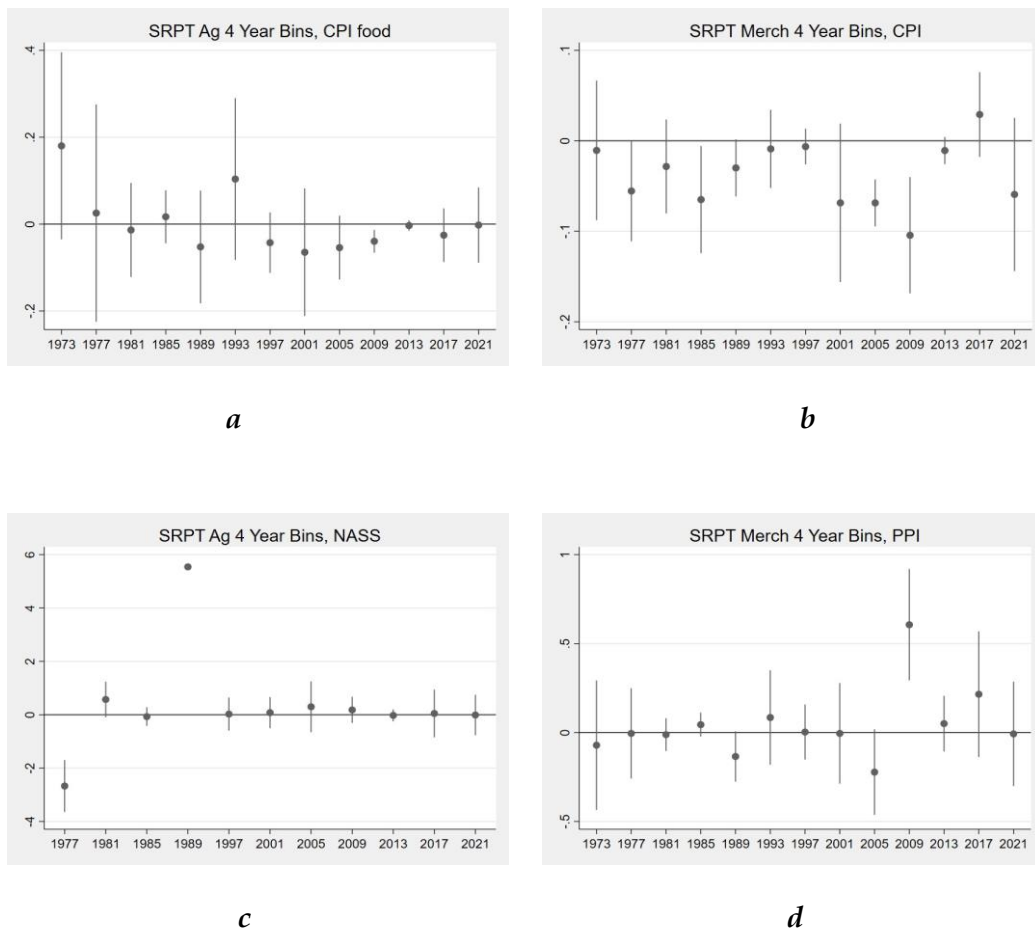


Figure 4. Short-run pass-through using regressions with 4 year bins, other specifications same as previous

Figure 5 shows the long run pass-through coefficients. Again, pass-through is mostly insignificant at the 5% level, although pass-through is positive for some intervals in the 1980's for the agricultural price index, and positive for the later decade plus for the general producer price index.

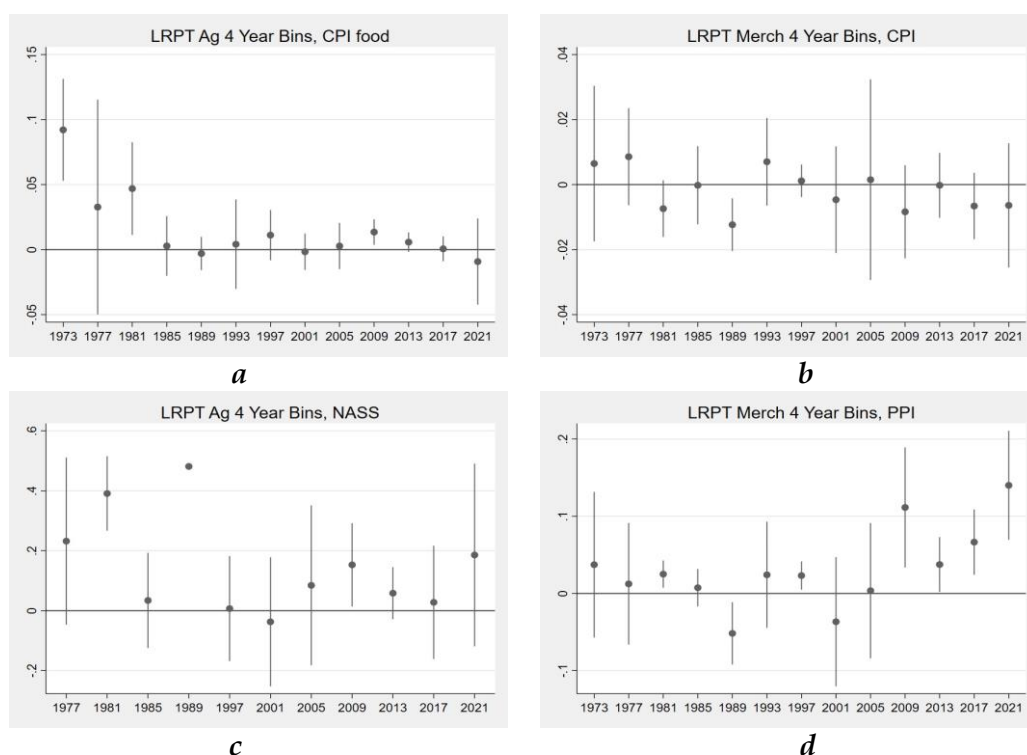


Figure 5. Long-run pass-through using regressions with 4-year bins, other specifications same as previous

We repeat these regressions using no lags for both the 4-year bins and rolling window specifications, using 5 year rolling windows instead of 10 year rolling windows, including the producer prices received index in the CPI regressions for the ag specification and general specification, and changing the size of the 4 year bins to 2 year bins and 1 year bins (without lags). Overall, the results do not change significantly and the insignificance of the coefficients remains robust across these different specifications.

Conclusion

We find low to zero pass-through from exchange rates into agricultural prices, as well as general prices, over the previous several decades for the United States. This is in line with prior literature, which we contribute to by being, to our knowledge, the first to examine pass-through from a U.S. agricultural trade-weighted exchange rate index into indices of U.S.

agricultural prices. Our findings lead us to conclude that changes in the U.S. exchange rate would result in limited or no effects on domestic prices and inflation. In particular, even as the U.S. dollar continues to appreciate, there will be limited to no disinflationary effects through an exchange rate mechanism.

These findings may be of relevance to policymakers. An increase in U.S. interest rates by the Federal Reserve, which causes an appreciation of the U.S. dollar, will result in lower disinflationary effects than in the case in which exchange rate pass-through were high. With the U.S. dollar continuing to appreciate, one concern among agricultural policymakers is that U.S. consumers will significantly switch their consumption towards imported agricultural goods and substitute away from agricultural goods produced domestically. Our findings suggest that this is less of a concern than it would be if exchange rate pass-through were significant.

References

1. Bailliu J., Wei Dong, Murray J. Has Exchange Rate Pass-through really declined? Some Recent Insights from the Literature. *Bank of Canada Review*, 2010.
2. Baquedano F. G., Liefert W. M. Market Integration and Price Transmission in Consumer Markets of Developing Countries. *Food Policy*, 2014⁶ Vol. 44, pp. 103–114.
3. Bureau of Labor Statistics, U.S. Department of Labor. Consumer Price Index (CPI) Databases, 2022.
4. Bureau of Labor Statistics, U.S. Department of Labor. Consumer prices up 9.1 percent over the year ended June 2022, largest increase in 40 years, 2022.
5. Burstein A., Gopinath G. International Prices and Exchange Rates. *Handbook of International Economics*, 2014, Vol. 4, pp. 391–451.
6. Campa J. M., L. S. Goldberg. Exchange Rate Pass-Through into Import Prices. *The Review of Economics and Statistics*, 2005, Vol. 87, pp. 679–690.
7. Campa J. M., Linda S Goldberg. Pass-through of Exchange Rates to Consumption Prices: What has Changed and Why. *Federal Reserve Bank of New York Staff Report*, 2006, No. 261.
8. Economic Research Service, United States Department of Agriculture. *Agricultural Exchange Rate Data Set*, 2022.
9. Feinberg R. M. The Interaction of Foreign Exchange and Market Power Effects on German Domestic Prices. *Journal of Industrial Economics*, 1986, No. 35 (1), pp. 61–70.

10. Feinberg R. M. The Effects of Foreign Exchange Movements on U.S. Domestic Prices. *The Review of Economics and Statistics*, 1989, No. 71 (3), pp. 505–511.
11. Gervais J. P., Khraief N. Is Exchange Rate Pass-Through in Pork Meat Export Prices Constrained by the Supply of Live Hogs? *American Journal of Agricultural Economics*, 2007, Vol. 89, pp. 1058–1072.
12. Goldberg P., Knetter M. Goods Prices and Exchange Rates: What have we learned? *Journal of Economic Literature*, 1997, Vol. 35, pp. 243–272.
13. Gopinath G., Itskhoki O., Rigobon R. Currency Choice and Exchange Rate Pass-Through. *American Economic Review*, 2010, No. 100 (1), pp 304–36.
14. Jašová M., Moessner R., Elo'd Takáts. Exchange Rate Pass-Through: What Has Changed Since the Crisis? *Bank for International Settlements Working Paper*, 2016, No. 583.
15. Liefert W., Persaud S. The Transmission of Exchange Rate Changes to Agricultural Prices. *Economic Research Report*, 2009, No 76.
16. Luckstead J. Asymmetric Exchange Rate Pass-Through in U.S. Imports of cocoa. *Journal of Agricultural and Applied Economics*, 2018, Vol. 50, pp. 369–386.
17. Marazzi M., Sheets N., Vigfusson R., Faust J., Gagnon J., Marquez J., Martin R., Reeve T., J. Rogers. Exchange Rate Pass-Through to U.S. Import Prices: Some New Evidence. *Board of Governors of the Federal Reserve System International Finance Discussion Papers Number*, 2005, No. 833.
18. McCarthy J. Pass-Through of Exchange Rates and Import Prices to Domestic Inflation in Some Industrialized Economies, 2007.
19. Nakamura E., Zerom D. Accounting for Incomplete Pass-Through. *Review of Economic Studies*, 2010, Vol. 77, pp. 1192–1230.
20. National Agricultural Statistics Service, United States Department of Agriculture. *Prices Received Survey and Indexes*, 2022.
21. Parsley D. C., Popper H. A. Exchange Rates, Domestic Prices, and Central Bank Actions: Recent U.S. Experience. *Southern Economic Journal*, 1998, No. 64(4), pp. 957–972.
22. U.S. Bureau of Economic Analysis. *GDP by Industry*, 2021.
23. U.S. Bureau of Economic Analysis, Retrieved from FRED, Federal Reserve Bank of St. Louis. *Compensation of Employees, Received: Wage and Salary Disbursements*, 2022.
24. Wiseman T., Luckstead J., Durand-Morat A. Asymmetric Exchange Rate Passthrough in Southeast Asian Rice Trade. *Journal of Agricultural and Applied Economics*, 2021, Vol. 53, pp. 341–374.
25. Woo W. T. Exchange Rates and the Prices of Nonfood, Nonfuel Products. *Brookings Papers on Economic Activity*, 1984, No. 15 (2), pp. 511–536.
26. World Trade Organization. *Trade Profiles: United States*, 2021.

27. Miao Xu, Orden D. Exchange Rate Effects on Canadian/us Agricultural Prices. Technical report, 2002.

28. Yeboah O., Shaik S., Allen A. Exchange Rates Impacts on Agricultural Inputs Prices Using Var. *Journal of Agricultural and Applied Economics*, 2009, No. 41 (2), pp. 511–520.

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