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Volume 15, 2008 - [Issue 3](#)

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# Inflation and relative price variability in Mexico: the role of remittances

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Pages 181-185 | Published online: 26 Nov 2007

Cite this article <https://doi.org/10.1080/13504850600722070>

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## Abstract

This article derives generalized impulse responses from the estimation of a vector autoregression (VAR) model using monthly data between 1995 and 2005 for Mexico, to examine the inflation–relative price variability (RPV) relationship, and to investigate if remittances could account for the observed relationship. While the positive relationship between inflation and RPV is a robust result, remittances are found to have significant positive effects on both inflation and RPV. These results are interpreted as providing evidence in support of our intuition that remittances could be responsible for generating a positive relationship between inflation and RPV.

## Acknowledgements

An earlier version of this article was presented at the 75th Annual Meeting of the Southern Economics Association in Washington, D.C. November 18–20, 2005. We would like to thank Catalina Amuedo-Dorantes and other members of the audience for many useful comments.

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## Notes

<sup>1</sup> In the literature, RPV is measured by the SD of relative price changes across commodities/sectors.

<sup>2</sup> For a brief survey of the literature, see, for example, Chang and Cheng ([2002](#)) and Nath ([2004](#)).

<sup>3</sup> According to official estimates, total remittances have increased from about 3.67 billion in 1995 to \$20.03 billion in 2005—by more than 5 times (based on authors' estimates from Banco de Mexico data).

<sup>4</sup> 'There were approximately 1.3 million households in Mexico receiving remittances in 2000. Over 10% of households in rural areas receive remittances, and for these households remittances represent almost 48.9% of their total current monetary income. In urban areas, over 4% of households receive remittances that account for almost 50% of their current monetary income' (Zarate-Hoyos, [2004](#)).

<sup>5</sup> Adelman and Taylor ([1992](#)) find that when all direct and indirect effects are taken into account, each dollar of remittances spent on consumption increases the Mexican gross domestic product by \$2.90.

<sup>6</sup> Also, though monthly data on remittances are available since 1980, because of various limitations in data collection process, they are less complete and, therefore, not very reliable for the early period of this process.

<sup>7</sup> The data series have been adjusted for seasonal movements, wherever necessary, using the US Census Bureau's X12 seasonal adjustment program. For a brief description, you may consult the EViews User Guide ([1994](#)).

<sup>8</sup> Note that  $P_t$  is constructed as a weighted index of all underlying prices and, therefore, it is desirable that both  $V_v$  and  $\bar{p}$  are calculated as weighted SD and mean, respectively.

However, we find that the results do not change. Moreover, some prominent studies for the United States (e.g. Vining and Elwertowski, [1976](#)) use unweighted measures.

<sup>9</sup> We begin with a lag length of approximately  $T^{1/3}$ . See Enders ([2004](#)), p.358.

<sup>10</sup> We first conduct augmented Dickey–Fuller test to determine the order of integration for each of the variables. The null hypothesis of a unit root has been rejected in all cases implying stationarity. Interested readers may obtain the test results from the authors.

<sup>11</sup> In a ‘somewhat related’ study, Rogers and Wang ([1993](#)) find that output, monetary and exchange rate shocks are the most important sources of fluctuations in relative prices in Mexico. They, however, use the ratio of the wholesale price index (WPI) to the consumer price index (CPI) as the measure of relative prices.

<sup>12</sup> Note that for this result, remittances are not required to have positive effects on inflation and on RPV. As long as they have similar effects on both, they will generate a positive relationship.

<sup>13</sup> We also estimate the model using data for a longer period starting in 1980. We do not find any significant effect of remittances on either inflation or RPV. As discussed before, the data on remittances during the 1980s and early 1990s were incomplete and not very reliable. However, we find evidence in support of a positive relationship between inflation and RPV even for this extended period of time.

<sup>14</sup> Similar specification can be found in previous studies. For example, Rogers and Wang ([1995](#)) include nominal exchange rate in addition to the real variables in the VAR model they estimated to investigate the sources of relative price changes in six high-inflation countries.

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