The University of San Francisco
USF Scholarship: a digital repository @ Gleeson Library | Geschke Center

Master's Theses | Theses, Dissertations, Capstones and Projects

Spring 5-20-2016

Financial Openness and Trade Volatility in Argentina

Joseph H. Asciuto
University of San Francisco, joeasciuto@gmail.com

Follow this and additional works at: https://repository.usfca.edu/thes

Part of the Finance Commons, International Economics Commons, and the Macroeconomics Commons

Recommended Citation
Asciuto, Joseph H., "Financial Openness and Trade Volatility in Argentina" (2016). *Master's Theses*. 178.
https://repository.usfca.edu/thes/178

This Thesis is brought to you for free and open access by the Theses, Dissertations, Capstones and Projects at USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. It has been accepted for inclusion in Master's Theses by an authorized administrator of USF Scholarship: a digital repository @ Gleeson Library | Geschke Center. For more information, please contact repository@usfca.edu.

Financial Openness and Trade Volatility in Argentina

Joseph H. Asciuto*
Masters Student
jhasciuto@usfca.edu

Department of Economics
University of San Francisco
2130 Fulton Street
San Francisco, CA 94117

May 31, 2016

Abstract

This paper will identify the relationship between financial openness and trade volatility in Argentina. Data spanning 1970-2011 provided by the IMF, WTO, and INDEC will be used to construct a panel dataset for both a global analysis and a sectoral analysis for the Argentine economy. The application of established and accepted techniques to the constructed dataset will show a negative correlation between trade volatility and financial openness; thus, financial openness acts as a stabilizing mechanism for trade. Additional analysis will be performed on the of role regional trade agreements as stabilization mechanisms for trade. A significant implication of this study is to illustrate the imperative for developing economies to financially integrate in order to stabilize trade, thereby stabilizing and promoting future growth and investment within their respective economies.

*I would like to thank M.C. Wong (my advisor), Suparna Chakraborty, Danilo Trupkin of the University of Buenos Aires, University of San Francisco's MS International and Development Economics class of 2016, and many others for useful inputs and assistance with the data collection. Funding from the University of San Francisco is gratefully acknowledged. All errors are my own.

1 Introduction

Since entering the period of globalization in the mid-1980s, economists have placed an emphasis on the role that global financial integration can play in the growth and development of the worlds economies. Numerous articles have been written and analyses performed that observe the correlation between financial integration and growth; however, fewer have explored the mechanism by which this growth occurs.

This paper will attempt to explain one of these mechanisms: specifically, trade volatility. If it can be shown that trade volatility can be reduced in the presence of higher global financial openness, important policy measures can be taken to strengthen the financial openness of developing and emerging economies. An exploratory piece such as this can provide an important first step towards understanding the role of financial openness as more than a means to growth, but rather as a tool to provide regional and global economic stability. Recently, there has been some attention drawn to the necessity of financial openness with emerging and developing economies. However, this attention precludes the notion of trade stability. With reduced trade volatility more predictable growth can occur, thus spurring further private investment on capital based upon the notion of predictable returns. Thus the link between financial openness and growth is established with trade volatility acting as a crucial mechanism.

It is important that an analysis such as this is performed, not only for developing economies, but also for the developed economies. If it is shown that financial openness is a means to stabilize trade, these developed economies can utilize this method with developing economies with which they intend to trade; thereby securing a more profitable partnership. For example, a unique understanding such as this can provide a wealth of benefits to Central and Latin America which has long stood as a trading partner with the United States, yet is frequently under integrated financially.

It is the intent of this analysis to provide a better understanding of the intermediary mechanism between financial integration and growth, and to answer the underlying question: Does financial openness affect trade volatility?

The rest of this paper is organized as follows: Section 2 reviews the theory and advantages of financial openness; Section 3 presents the methodology for the study, which outlines how the data is collected and the empirical model and hypothesis; Section 4 focuses on the results of the study and Section 5 presents the conclusion and implication of the study.

2 Literature Review

2.1 A Brief Word on Exchange Rates

Although the subsequent analysis investigates the role of Financial Openness on trade volatility, it would first be prudent to explore what other components of trade might also affect volatility. Traditionally we understand trade through the frameworks of comparative advantage (Ricardian, Hecksher Ohlin, Samuelsen), geographic (Gravity), political, and market structures. While these frameworks do an adequate job of explaining direction of trade and perhaps the volume of trade, we are more concerned with the volatility of trade.

The linkages between financial integration, trade volatility, and GDP growth is constructed upon the underlying premise that trade volatility does indeed affect growth in the near and long term. From this underlying assumption, we can then study how financial integration will affect growth via trade volatility. In a formative piece, Ramey et al (1995) demonstrated the link between volatility and growth. In a subsequent paper, Imbs (2005) also demonstrated a negative correlation between growth and volatility. However, in neither paper was it explored the source or explanatory mechanism of this volatility.

One might suggest that an underlying factor or explanatory mechanism that affects volatility is the inherent relationship between exchange rates on trade. Despite this reasonable assumption, it should be stated that the extent to which there is an effect is not quite so certain. Some authors have found that exchange rate stability is not necessarily associated with less trade volatility. (Bacchetta, 2000) While others have found that indeed there is a positive relationship between exchange rate stability and trade stability; particularly amongst more financially developed economies. (Hericourt, 2013) This seemingly contradictory position leads one to believe that exchange rate fluctuations can affect trade volatility differently, or that

perhaps there is no definitive link.

To further the point, small open economies such as Chile and New Zealand were found to be affected more by exchange rate fluctuations than larger economies. (Bourdon, 2012). Although this may in fact be the case, Bourdon et al. was unable to definitively ascertain the direction of impact because their findings show that exchange rates affect sectors differently within a given economy. This serves to reiterate the notion that exchange rate stability (or lack thereof) cannot be entirely responsible for trade stability.

Furthermore, utilizing a firm-level approach from 100,000 Chinese firms to investigate the effect of exchange rate fluctuations on exports, it was found that a trade-deterring effect could be seen in the presence of exchange rate fluctuations. (Hericourt, 2013) The authors also found that exports were less likely to enter new markets with higher exchange rate volatility. Lastly, in another firm-level study conducted in France, there were differences seen in the way that high performance and low performance firms react to exchange rate fluctuations. (Berman, 2009) Thus we can ascertain that the configuration of an economy will behave differently with respect to changes in exchange rates.

2.2 General Overview of the Theory of Financial Integration

At this point one can conclude exchange rate stability cannot be identified as primary mechanism of trade volatility due to the lack of cohesive findings in current literature. Therefore one must ask, What other mechanisms can affect trade volatility? Therein lies the magnitude and importance of this analysis; it is to answer a fundamental question that can provide insight to the causes of trade volatility that havent already been examined.

Unfortunately there have not been to my knowledge many empirical studies of openness and trade volatility, however, we are not without some underlying theory. It is often thought that financial integration provides a host of potential important benefits. As we have seen in the last several paragraphs with regard to exchange rates, the effects arent always prominently seen. Many have argued that access to world capital markets allow nations to borrow and smooth consumption when faced with adverse macroeconomic shocks. Furthermore, integration and access to these markets provide a kind of risk sharing that can be large and

permanent. (Obstfeld 1994) However it is often neglected that this same risk sharing quickly turn negative through the form of contagion and reverse capital flows. (Agenor 2003) Before we discuss the potential negatives, let us first outline the potential benefits and how they might impact macroeconomic volatility:

- Consumption Smoothing This will have an obvious effect on macroeconomic volatility [MV]. If a nation is undergoing a negative shock, they can borrow from the capital markets. This smoothing effect is especially important if the shock itself is temporary in nature.

- Enhanced macroeconomic discipline It is thought that by participating in the global capital markets, the nations will be induced to follow better macroeconomic policies and therefore reduce the number of policy mistakes. (Obstfeld 1998) This will have an obvious and probably large impact on MV. Thus participation encourages MV stability and overall growth

- Banking efficiency and stability The idea is that the presence of foreign banks and participation in global capital markets will improve the quality and efficiency of domestic banking services; thus smoothing consumption. Additionally, the foreign banks may reduce or event prevent capital flight during times of domestic crisis. Again, this will clearly reduce MV.

2.3 Financial Integration affecting Trade Volatility

Thus through an aggregate process we might be able to conclude that consumption smoothing of individual firms and households in an economy might directly affect trade via the smoothing effect; in other words, trade should become less volatile in economies where there is greater financial openness due to smoother consumption of households and production of firms. This relationship is best described using two equations and a formal definition. The first equation is the individual decomposition of the changes in consumption, and the second equation is the aggregate decomposition. Each equation is utilized in the work Financial Openness and Consumption Smoothing by Jappelli (2011) whose proofs and underpinnings

are found in Blundell (1998). The first equation is as follows:

$$lnc_{i,a,t} = lnc_{i,a-1,t-1} + z'_{i,a,t}\gamma + \Phi u_{i,a,t} + \Psi e_{i,a,t} \tag{1}$$

Where c is consumption, z are preference shifts, is the slope of consumption, is the response to permanent shocks, is the response to transitory shocks, and both u and e are the shocks respectively. Thus we succinctly see that a change in consumption is a function of last periods consumption, personal preferences, and sensitivity to shocks. Most importantly, the sensitivity parameter will become lower with increased financial openness; thus consumption becomes less sensitive to transitory shocks and is inherently smoother.

The aggregated decomposition equation is extremely similar to the individual decomposition equation with the ommittance of individual preference and is as follows:

$$lnc_{i,a,t} = lnc_{i,a_0,t-a+a_0} + \Phi \sum_{j=a_0+1}^{a} u_{i,j,t-a+j} + \Psi \sum_{j=a_0+1}^{a} e_{i,j,t-a+j} \tag{2}$$

Where again, we find that is the main parameter of interest. Thus, when aggregated, changes in consumption are still affected by transitory shocks. In Jappelli (2011) we know that the value of the PSI parameter is lowered in the presence of greater financial openness. Therefore in the presence of a transitory shock to income and under financially open conditions, diminished changes in consumption will be observed. This is the consumption smoothing effect that has been explicitly outlined in the existing literature.

The final piece of the underlying theory that would explain the channel by which financial openness can smooth trade relies strictly upon the definition of trade itself. Up to this point we have had to rely upon the published work of Jappelli, Blundell, and Agenor to illustrate the phenomena of consumption smoothing and the direct role financial openness plays in that mechanism. Now we will utilize two definitions to complete the arc; the definition of output, and the definition of trade. Under the definition of Net Exports we have:

$$NX = X(E^r, Y^f) - E^r M(E^r, Y, T, r, \epsilon) \tag{3}$$

This is a definition which all are familiar with, and needs no further explanation. It is important to note, however, the significance of consumption on output and domestic demand. As domestic output changes due to changes in consumption, domestic demand will also change because they inextricably linked. Using this definition, it is clear that the value of imports is dependent upon domestic output and demand among other things. This is might conceivably be especially true in the case of an "import heavy" economy. Thus we see that through consumption and domestic output, financial openness can indeed affect trade.

3 Methodology

3.1 Data Sources

Constructing the panel data will require three main sources of information. The first source, provided by the WTO, is the Trade Statistics Catalogue which will allow for the computation of the trade volatility as the independent variable. It comprises 157 trading entities since 1970 and is compiled on an annual basis. This method and approach was taken from the 2007 working paper by Andrew K. Rose entitled, Does the WTO Make Trade More Stable. His methodology and approach will be outlined in detail in the subsequent methodology section.

The second source of data is also provided by the IMF and will be used in both methods to compute the degree to which an economy is financially integrated with the global economy. The Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER) provides an annual country by country index of all 187 IMF entities since 1970. Specifically, it provides a country by country account on current international payments and transfers, as well as arrangements for payments and receipts. This method and approach is modeled after the work of Jean Imbs (2005) entitled, The Real Effects of Financial Integration. However, more specifically we will be using the Chinn-Ito Index which is based off of the AREAER. The method will be outlined in detail in the subsequent methodology section.

The third source of data comes from in the Penn World Tables 8.1 (PWT81) and will be used to provide total population and real gross domestic product for each country since 1970. And lastly, the final source of data used is provided by INDEC which details the annual data

from 17 different sectors in the Argentine economy since 1991. The method with which we will use this data will be outlined in the subsequent section.

3.2 Conceptual Model

Prior to examining the complete regression, it is important to compose and analyze the two main variables that will be utilized. For the dependent variable, trade volatility, a measurement will be taken as follows:

$$TradeVolatility = \sigma(Trade)_{i,t,p} \tag{4}$$

Where volatility is the standard deviation of Trade of country [i] in time [t] during time period [p]. Based on the work of Rose, the inclusion of both measurements of time is done to produce a frame from which volatility can be measured; volatility itself must be measured over time periods. This study differs from his in an important way, however: in Rose's (2004) work, he uses a time period of 5 and 10 years, which may indeed suit the purposes of his work, but would fail to adequately fit the quarterly data used in Argentina. For this reason, time period specifications of 4, 6, and 8 years have been to selected to measure the trade volatility. It should be stated, that although the time period specifications do extend to 8 years, financial openness is not expected to affect volatility more than only a few years. The inclusion of the longer time periods is done for robustness and out of a great deal of precaution as a sensitivity test.

The main independent variable of interest that must be constructed is the measurement of financial openness. This variable is readily available to us using the Chinn-Ito Index and is represented in our model as follows:

$$FinancialOpenness = \mu(KAopen)_{i,t,p} \tag{5}$$

The variable is straightforward and does not lend itself to modification. An average of the index is taken which corresponds to the length of timeframe used in the independent variable;

thus they are matching in time length.

For our analysis, we will examine the results of the Global regression primarily using the timeframe of 8. This is done to reduce the AIC while still maintain the highest possible R-squared. The analysis of the Argentine regression will be done primarily through the timeframe of 4, due to loss of observable data if the timeframe is expanded.

3.3 Econometric Specification

Finally, using the constructed independent and dependent variables, two complete models can be formed. The strictly Argentine sectoral model is a follows:

$$\sigma(Sector)_{t,p} = \beta_0 + \beta_1 \mu(KAopen)_{t,p} + \beta_2(PesoCrisis) + \beta_3(Controls) + \epsilon \tag{6}$$

There are also controls for real GDP, which is lagged one year to avoid endogeneity, as well as added controls for population. Additionally, specific year and country fixed effects have been included for robustness.

In the more broad global financial integration model, the specified regression is as follows:

$$\sigma(Trade)_{i,t,p} = \beta_0 + \beta_1 \mu(KAopen)_{i,t,p} + \beta_2(RTA) + \beta_3(Controls) + \epsilon \tag{7}$$

With exception of the dependent variables and the inclusion of the Peso Crisis or RTA independent, all other variables remain identical to the first strictly Argentine model and hold by the same assumptions. In both regressions there are controls for GDP, Population, and four Financial Crises. It should be noted that in both forms of the model the dependent variable will be assessed at the three time periods specified above; 4, 6, and 8. This, in conjunction with the two models, will provide six regressions from which the analysis will be performed, and should satisfy a certain degree of robustness in the results.

Therefore we expect to find a negative correlation between financial integration and trade volatility; implying that greater financial integration increases trade stability.

4 Results

4.1 Summary Statistics

Table 1: Global Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Import Volatility	4968	4319.389	12753.08	1.448084	229884.9
Export Volatility	4968	4124.473	12567.96	0.29137	218412.8
Financial Openness	4739	-0.03917	1.454272	-1.8889	2.389668
Log GDP	4956	10.21399	2.214506	4.935684	16.38753
Exchange Rate	4956	287.2312	1220.648	3.34E-12	17024.29

Table 2: Argentine Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Imports CIF Volatility	55	547.1535	281.7417	127.3058	1457.948
Imports FOB Volatility	55	514.277	263.6056	115.8766	1379.532
Exports FOB Volatility	55	747.8532	223.8233	140.9605	1615.04
Financial Openness	55	0.558693	1.230513	-1.18766	2.389668
Log GDP	55	12.87894	0.124787	12.56912	13.13213
Exchange Rate	55	1.887866	0.976725	0.999008	3.119907

4.2 Global Analysis

First we will examine the WTO outputs which will serve as a proof of concept. The very first thing we see is that there is indeed a negative correlation between trade volatility and financial openness. With this link established, it can serve to add impetus to the crucial nature of financially integrating emerging and developing economies to stabilize trade in those economies.

Examining the global regressions further we find some general trends: To reiterate, Financial Openness is negatively correlated with trade volatility. Although it is only statistically significant at 10% for Exports in all three period timeframes, it is still nevertheless what we expected to find and is negative in both Imports and Exports. Furthermore, the signs remain

consistent throughout the three period timeframes and their coefficients increase slightly as the period timeframe is expanded from four to eight. This could very well be due to the construction of the timeframes themselves; eight periods would allow the capture of more volatility, and perhaps should be interpreted as being just that. However, the most important finding from all of this is that an empirical contemporaneous relationship is evident, consistent, and significant. This will allow us to proceed later with a foundation for the Argentine volatility having now seen it on a global level.

As we continue to examine the global regressions results, we find that Population as expected is negatively correlated in both Imports and Exports along with Exchange Rate in all three period timeframes. Interestingly, the coefficient for Real GDP becomes increasingly significant as the period timeframe expands. Unlike the other coefficients that generally remain at the same level of significance throughout the three timeframes, Real GDP moves from not being significant in Imports of Exports during a four year period, to being significant at the 5% level in an eight year period. Although the sign and magnitude were expected and remain consistent, its significance does not remain consistent. This can again be possibly attributed to the larger time period being able to capture the volatility slightly better than a smaller timeframe. Still, it should be reiterated that the positive relationship is established and obviously shouldnt be seen as anomalous.

With regard to the relationship of trade agreements and trade volatility, we find that they are generally stabilizing (reduced volatility) with two major exceptions; NAFTA and the WTO. In the specific case of NAFTA, Export volatility is increased by approximately $17 billion and is significant at the 10% level throughout all three period timeframes. Furthermore, the Import volatility coefficient is nearly twice that in all three period timeframes, however, it is not significant at any level. This can possibly be explained by the countries involved in the RTA. All three economies are strongly tied to that of the United States, therefore if the United States experiences volatility (during a recessions or crises) it is also plausible to say the other two economies will be affected as well. In other words, this RTA is not as diversified as the other RTAs controlled for here. In the case of the WTO, although it does show a comparatively small positive relationship it isnt significant at any level in any timeframe. The most notable

and important finding with respect to the WTO is that it confirms what Rose (2004) found in his bilateral empirical analysis; it confirms that the WTO does not necessarily stabilize trade as the organization claims. To the contrary, the evidence here shows that there is a dubious relationship at best, and perhaps even a detrimental impact due to increased volatility at worst. With regard to the other six RTAs (SAFTA GAFTA CAFTA CEFTA COMESA), we find what we might expect membership produces a stabilizing impact on trade volatility. With the exception of two RTAs, the relationship is generally small and not statistically significant; however it is consistent across all three time periods. With regard to CAFTA it has a highly significant coefficient at 1% and reduces volatility of its member economies by approximately $6 billion in both Imports and Exports. This, albeit small in the global economy, is important considering the members of CAFTA are smaller Central American economies. Likewise we find a highly significant coefficient at 1% for COMESA in all three period timeframes, however, the coefficients magnitude sharply decreases from approximately $7 billion in a four year time period to $4 billion in the six and eight timeframes. This would suggest that although its members do enjoy more trade stability, the extent to which membership protects it from volatility is lesser in the long run.

Finally, it is important to examine the effect of four major financial crises during the 1970-2011 timespan. As expected, we find that the presence of a crisis does increase volatility. However, it appears that the significance of the coefficients and the magnitude of them tend to decrease through the three period timeframes. In the specific instance of the Global Crisis of 2008, the magnitude is relatively and comparatively large and highly significant throughout all three period timeframes in both Import and Export, whereas with the other crises volatility is comparatively small and the effect is significantly diminished. The lone inconsistency is that Latin American Crisis where Export volatility is negative during the four and six period timeframes, yet changes sign and magnitude to positive in the eight period timeframe. This, like previous analysis, it believed to be the result of an expanded capture period whereby volatility can be measured over a longer period.

Before an analysis is performed on the Argentine quarterly data, it would be prudent to first review the conclusions made from the global data: Financial Openness is evident,

consistent, and significant. Exchange rates appear to have a small effect on trade volatility as presumed in the literature review. Lastly, Regional Trade Agreements reduce trade volatility while financial crises increase the volatility.

4.3 Argentine Sectoral Analysis

With respect to Imports: General trends regarding Financial Openness, Real GDP, and Population are consistent across the Import sectors from what was seen in the Global regression.

Here again we see that Financial Openness has a stabilizing force on the import volatility. However, it should be noted that the findings are not strictly negative across all sectors, nor are they significant in all sectors. In both Capital Goods and Automobiles, the volatility was seen to increase with openness in the 4 period timeframe, however not in a significant way. Similar to the phenomena that were seen in the Global regressions for Financial Openness, the sign of the coefficients decrease and significance of the coefficients increase with the expanded timeframes. This means that the once positive coefficients turn negative in the case of Capital Goods and remain positive albeit less significant in the case of Automobiles. A possible explanation for the increased volatility seen Capital Goods and Automobiles will be discussed later during the sector by sector analysis. However it is prudent to say at this moment in our analysis that the once not significant coefficients in both of these sectors become more negative and more significant over time. As was the case in the Global regressions, this could likely be attributed to the expanded timeframes ability to better capture the true volatility.

Interestingly, two specific sectors that are noteworthy due to possible effects from government policy: Autos and Capital Goods. In the case of Autos an import tax on autos and autoparts has been made stronger over time; most recently in 2014; this would show up in the four year, but not the eight year. In the case of Capital, the government placed import tax in 2011; this would show up in the 4 year but not the eight year.

At this point it would be best to bring up the presence of structural breaks in the volatility for two sectors after the Peso Default: Fuels Imports and Primary Products Exports. These two sectors were also most likely affected by government policy. In the case of Fuels, the industry was nationalized after the default; thus lending itself to changes in behavior. As for

Primary Products, there is a much less clear explanation, however it is after the Peso Default that the economy switched to a floating exchange rate; thus changes in cost structure for the domestic firms might have been affected.

5 Conclusion

In conclusion, it can be said that financial openness does indeed decrease trade volatility. However, the effects are largely a nice byproduct and shouldn't be the aim of increased openness. To say this another way, in the specific case of Argentina whose economy is estimated to be around 600 billion USD in 2013, an increase in openness will result in lower sectoral volatility of only a few million dollars annually. This is hardly a strong motivating factor for large changes in and economy's financial openness.

However, the effects are present and perhaps might become more pronounced and lesser developed economies where economic stability can have larger and longer impacts on its growth.

References

Agenor, Pierre-Richard. (2003). Benefits and Costs of International Financial Integration: Theory and Facts. The World Economy, Vol. 26, Issue 8, pp. 1089

Baum, C. F., & Caglayan, M. (2008). On the Sensitivity of the Volume and Volatility of Bilateral Trade Flows to Exchange Rate Uncertainty. Journal of International Money and Finance, 1, 79-93.

Bacchetta, P., & Van Wincoop, E. (2000). Does exchange-rate stability increase trade and welfare? American Economic Review: 1093-1109.

Berman, N., Martin, P., & Mayer, T. (2012). How do different exporters react to exchange rate changes? The Quarterly Journal of Economics 127.1: 437-492.

Blundell, Richard. (1998). Consumption Inequality and Income Uncertainty. Quarterly Journal of Economics, Vol. 113, pp. 603

Broda, C., & Romalis, J. (2011). Identifying the relationship between trade and exchange rate volatility. Commodity Prices and Markets, East Asia Seminar on Economics, Volume 20. University of Chicago Press.

Caglayan, M., & Di, J. (2010). Does Real Exchange Rate Volatility Affect Sectoral Trade Flows? Southern Economic Journal, 77(2), 313-335.

Hericourt, J., & Poncet, S. (2013). Exchange rate volatility, financial constraints, and trade: empirical evidence from Chinese firms. The World Bank Economic Review: lht035.

Huchet-Bourdon, M., & Korinek, J. (2012). Trade Effects of Exchange Rates and their Volatility: Chile and New Zealand.

Imbs, J. (2006). The Real Effects of Financial Integration. Journal of International Economics 68: 296-324

Jappelli, Tullio. (2011). Financial Integration and Consumption Smoothing. The Economic Journal, Vol. 121, pp. 678

Lane, R., & Milesi-Ferretti, G. (2006). The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970-2004. IMF Working Paper

Ramey, G., Ramey, V.A., (1995). Cross-country evidence on the link between volatility and growth. American Economic Review 85, 11381151 (December).

Rose, A. K. (2004). Does the WTO Make Trade More Stable? National Bureau of Economic Research. Working paper 10207.

Table 3: Global Trade Volatility (per.8)

VARIABLES	Exports	Imports
Financial Openness	-899.8	-697.2
	(-555.1)	(-473.4)
Exchange Rate	-0.374*	-0.400**
	(-0.19)	(-0.187)
SAFTA	-5,043	-1,206
	(-3,549)	(-5,702)
NAFTA	17,173**	28,570
	(-8,124)	(-18,217)
MERCOSUR	-2,187	-1,868
	(-1,678)	(-1,568)
GAFTA	-1,225	-2,163
	(-1,730)	(-1,352)
CAFTA	-6,319***	-5,875***
	(-1,558)	(-1,549)
CEFTA	-4,872*	-4,291
	(-2,708)	(-3,078)
COMESA	-3,896**	-3,396**
	(-1,515)	(-1,628)
WTO	2,303	2,098
	(-1,590)	(-1,616)
Latin American Crisis	122.1	1,005
	(-531.3)	(-874.9)
Asian Financial Crisis	1,270	3,526***
	(-1,134)	(-1,287)
Russian Ruble Crisis	708	1,191
	(-769.5)	(-915.4)
Global Financial Crisis	4,691	6,867*
	(-2,997)	(-4,148)
Constant	-2,841	-608.6
	(-16,927)	(-14,665)
Observations	4,608	4,608
Number of Countries	157	157
Adjusted R-squared	0.239	0.269
Period FE	YES	YES
Country FE	YES	YES

Table 4: Import Volatility in Argentina (per. 4)

VARIABLES	Import CIF	Capital Goods	Intermediate Goods	Fuels	Parts for IG	Consumer Goods	Autos
Financial Openness	-95.39	5.445	-59.97**	-25.45*	-11.55	-14.44	13.54***
	(-75.87)	(-16.66)	(-24.16)	(-13.15)	(-15.8)	(-17.64)	(-4.99)
Real GDP	948.6**	-60.82	466.1***	428.6***	276.3***	66.23	-67.47
	(-437.7)	(-113.3)	(-136.1)	(-149)	(-84.77)	(-80.09)	(-55.63)
Population	286.9	1,061*	-1,100	-778.1	-0.398	84.62	26.35
	(-2,666)	(-545.1)	(-857.8)	(-505.2)	(-649.9)	(-459.6)	(-209.9)
Exchange Rate	-142.2	-25.68	-27.88	40.86***	-41.34*	-40.03	4.039
	(-122.7)	(-23.9)	(-41.73)	(-13.91)	(-24.21)	(-24.79)	(-5.956)
Financial Crisis	72.72	-28.36	58.56*	355.5***	-2.069	14.1	76.78***
	(-95.6)	(-27.43)	(-29.11)	(-43.06)	(-11.22)	(-18.87)	(-13.89)
Peso Default	617.6***	117.2***	182.6***	-9.718	76.41**	177.2***	30.94***
	(-179)	(-35.44)	(-59.63)	(-16)	(-32.8)	(-41.2)	(-6.987)
Constant	-12,392*	-2,837	-1,789	-2,685*	-3,361**	-975.7	804.7
	(-6,592)	(-2,022)	(-1,890)	(-1,498)	(-1,524)	(-1,169)	(-898.9)
Observations	54	54	54	54	54	54	54
Adjusted R-squared	0.263	0.027	0.329	0.654	0.338	0.332	0.199

Table 5: Import Volatility in Argentina (per. 4)

VARIABLES	Import FOB	Freight	Insurance
Financial Openness	-89.28	-4.828	-0.903*
	(-71.17)	(-4.417)	(-0.495)
Real GDP	845.6**	94.51***	5.631*
	(-406.3)	(-31.56)	(-3.127)
Population	429.3	-111.1	-24.71
	(-2,496)	(-168.6)	(-17.82)
Exchange Rate	-138.4	-3.153	-0.636
	(-115.3)	(-6.819)	(-0.781)
Financial Crisis	96.21	-18.48**	-1.689**
	(-87.63)	(-7.74)	(-0.645)
Peso Default	579.9***	33.37***	4.082***
	(-168.4)	(-9.624)	(-1.147)
Constant	-11,624*	-776.4**	21.91
	(-6,194)	(-379.9)	(-46.11)
Observations	54	54	54
Adjusted R-squared	0.265	0.258	0.189

Table 6: Export Volatility in Argentina (per. 4)

VARIABLES	Export FOB	Primary Products	Agricultural Manufactures	Industrial Manufactures	Fuels
Financial Openness	-6.794	50.90*	-40.90**	14.89	-14.69
	(-57.68)	(-27.69)	(-19.99)	(-19.77)	(-11.21)
Real GDP	694.4	-313.4	953.0***	544.2***	235.8***
	(-439.8)	(-198.3)	(-201.5)	(-158.7)	(-85.69)
Population	-619.7	183.4	-1,460	-831.2	411.2
	(-2,367)	(-1,068)	(-972.5)	(-929.5)	(-431.3)
Exchange Rate	63.63	71.97**	6.895	43.78**	-8.167
	(-64.49)	(-31.88)	(-18.97)	(-21.71)	(-11.56)
Financial Crisis	-108.3	3.252	-103.1*	24.61	108.2***
	(-109.4)	(-49.34)	(-51.39)	(-31.44)	(-24.25)
Peso Default	-27.26	-57.38	16.36	-1.633	15.26
	(-90.07)	(-44.85)	(-18.45)	(-27.57)	(-15.52)
Constant	-6,060	3,726	-6,710***	-3,861*	-4,385***
	(-7,038)	(-3,133)	(-2,098)	(-2,190)	(-1,028)
Observations	54	54	54	54	54
Adjusted R-squared	0.085	0.114	0.529	0.378	0.546

Table 7: Evidence of Structural Breaks (per. 4)

	Primary Products Exports		Fuels Imports	
VARIABLES	Before 2001	After 2001	Before 2001	After 2001
Financial Openness	14.57	659.2***	-18.30***	-26.45
	(-20.95)	(-174)	(-5.827)	(-70.04)
Real GDP	-656.6	12,448**	70.9	-780.6
	(-426.2)	(-4,686)	(-63.27)	(-2,054)
Population	4,370	-20,273	-100.6	-41,619**
	(-3,757)	(-64,327)	(-506.7)	(-19,481)
Exchange Rate	-324.6***	242.9	24.31	265.8
	(-64.89)	(-585.2)	(-24.97)	(-171.8)
Constant	-7,612	-74,259	-827	152,950**
	(-9,295)	(-236,199)	(-1,152)	(-69,271)
Observations	30	24	30	24
Adjusted R-squared	0.187	0.506	0.41	0.92