Why Don’t We Observe Improvements in Consumption Smoothing as Countries Get More Financially Integrated: Bridging Theory and Empirics.

Abstract:

Empirical studies investigating the effects of financial integration on consumption smoothing are at best inconclusive, failing to find support for predictions of the theoretical literature. This short assessment argues that among key problems with this empirical literature are the lack of a well-defined theoretical framework and measurement issues of financial integration. Via a simple framework, this study highlights the relevance of the actual degree of financial openness in determining the effects of financial liberalization on consumption smoothing. It also provides suggestive theoretical and empirical evidence that the productivity shock correlation between a country and the rest of the world may help explain why we do not observe more consumption smoothing as countries have become more financially liberalized.

*I am thankful to Susan Collins, Jonathan Heathcote and Ayhan Kose for valuable comments. Earlier version of this paper was presented in Midwest Economic Association Meetings in 2007. Any mistakes are my own.
1. Introduction

Over the past two decades, official restrictions on cross-border capital flows have decreased while actual capital inflows and outflows among countries have increased substantially\(^1\). Very influential theoretical studies predict that as countries become more financially liberalized they should be better able to smooth consumption\(^2\). The underlying intuition is that increased access to the global financial markets should enable countries to offload some of their income risk on to world markets. A number of recent papers have empirically examined the relationship between financial liberalization and consumption smoothing\(^3\), but have not been able to establish causality between the two.

However, there are two problems with the existent work in this literature. First, most of these studies are *ad-hoc* and do not incorporate recent theoretical developments important to the analysis. Second, measuring the actual degree of financial openness is a challenging enterprise. Many researchers have tried to capture the complexity of real-world financial openness with varying degrees of success, and varying degrees of coverage\(^4\). This study uses multiple available indicator of financial openness in order to capture the degree of financial liberalization of different countries.

Building on a very simple model from Heathcote and Perri (2002), this study develops and applies a framework for studying the effects of financial liberalization on consumption smoothing. The main findings are that the effects of financial liberalization on consumption smoothing depend on both the initial extent of financial integration, and on the correlation

\[^1\] World Economic Outlook (2001), Prasad, Rogoff, Wei & Kose (2006), Lane & Milesi-Ferretti (2003)
\[^2\] Lewis (1996), Obstfeld & Rogoff (1996)
\[^3\] Kose, Prasad & Terrones (2006), Lewis(96), Bekeart, Harvey & Lundblad (2005), Imbs(2005)
\[^4\] Edison et al. 2004
between the productivity processes of a country and the rest of the world. Failure to account for these factors in past empirical analysis can help explain why we do not observe improvement in consumption smoothing as countries get more financially liberalized. The paper concludes by documenting suggestive evidence that supports the predictions of this theory.

2. Theoretical framework

Following Heathcote and Perri (2002) I consider a (static) two-country exchange economy. Capital in each country is used to produce perishable output, the quantity of which depends on the realization of the state of nature \( s \). Domestic output is denoted \( X(s) \), and foreign output is \( Y(s) \). Prior to any trade, the representative domestic agent owns all of domestic capital stock, while the foreign agent owns foreign capital. At the start of the period, the domestic household buys claims to a fraction \( \theta^f \) of the foreign capital stock, given the budget constraint. Then, the state of nature is revealed, contracts are honored, and agents consume output to which they have claims.

A tax \( \tau \) on repatriated earnings represents market restrictions in this model. For high values of \( \tau \), no trading takes place and autarky prevails, while values of \( \tau \) close to zero imply no impediments to cross-border capital movements and a country that is financially open. I follow Lewis (1996), who argues that as countries get more financially integrated, consumption should vary with the common component of international income growth and should be less dependent on country-specific disturbances. Thus, I define the correlation between domestic consumption,
c, and domestic output, X, as a measure of consumption smoothing. As countries integrate with the global economy, increasing their ability to smooth consumption, the correlation between domestic consumption and domestic output should decline. The following equation can be derived (see Appendix A for details):

$$\text{Corr}(c,X) = \left\{ \left[1 - \frac{\mu}{A\sigma} \right] + \left( \frac{2\mu}{A\sigma} \right) \frac{1}{2-\tau} + \frac{\rho}{2-\tau} \right\} \frac{\sigma}{\sigma_c} \tag{1}$$

where, $\mu$ denotes the mean of output, $E(X)$ and $E(Y)$, at home and abroad, $\sigma$ is the standard deviation of output (in our analysis it will be the same for both countries), $\sigma_c$ is the standard deviation of consumption at home, $\rho$ is the correlation of productivity shocks between home and foreign countries, and $\tau$ denotes the impediments to trade in foreign capital. Equation (1) shows that the correlation between domestic consumption and domestic output depends on the extent of market restrictions, $\tau$, as well as on the correlation of productivity shocks between the two countries, $\rho$.

This framework has important implications about the measure of consumption smoothing. Early studies in this area have suggested that the relationship between consumption smoothing and financial integration is linear. This framework suggests that for given country output, output volatility, and productivity shock correlation with the rest of the world, there exists a nonlinear relationship between financial liberalization and consumption smoothing. Next, the framework

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5 Other measures of consumption smoothing used in the literature are 1) the correlation between domestic and rest of the world consumption, and 2) volatility of consumption. I do not regard any one measure as being better than others.

6 The empirical findings of Kose, Prasad, Terrones (2003) also suggest a nonlinear relationship between financial integration and consumption smoothing for outcome-based (de-facto) measures of consumption smoothing.
highlights the importance of productivity shock correlations with the rest of the world in explaining the observed changes in measures of consumption smoothing.

Figure 1 shows the relation between impediments to trade in capital, $\tau$, and consumption smoothing, as described by equation (1), for different levels of the productivity shock correlation between countries. The lower the correlation between domestic consumption and domestic output, $\text{corr}(c,X)$, the more integrated the country is with world markets such that its domestic consumption is less dependent on idiosyncratic country risks. For a given correlation of productivity processes, $\rho$, as the country becomes more liberalized the correlation between consumption and output in the domestic country decreases\(^7\).

Figure 1: Financial Openness and Consumption Smoothing for Different Values of Productivity Shock Correlation

\[ \text{Corr}(c,X) \]

Note: The figure shows the relationship between impediments to foreign capital and the correlation btw domestic consumption and domestic output as in equation (1).

\(^7\) The choice of parameters in Figure 1 is: $\mu = 2$, $A = 1$ and $\sigma^2 = 0.2$. The choice of $A$ is the same as in the literature, and the choice of $\mu$ and $\sigma^2$ are similar to Heathcote and Perri (2002)
Figure 1 also highlights that the measure of consumption smoothing is affected by the correlation of productivity processes, $\rho$, between domestic country and the rest of the world. For all values of impediments to trade in foreign capital, as $\rho$ increases (this is shown by an upward shift in the curve in the figure) consumption smoothing deteriorates. The intuition would be that as $\rho$ increases, productivity processes between the domestic country and the rest of the world become more similar, making the gains from diversifying consumption risk smaller.

Conventionally, for a given country, possible changes in both the level of impediments to trade in foreign capital and the productivity shock correlation must be considered. In Figure 1, this may be represented by a move from point A to point B. As the country goes from point A to point B, $\tau$ decreases, meaning that the country relaxes the restrictions to trade in foreign capital, but the correlation of productivity process with the rest of the world, $\rho$, increases, and the net result is deterioration in consumption smoothing. In the next section, I will show preliminary evidence suggesting that $\rho$ may indeed be an important determinant in explaining the patterns of consumption smoothing.

3. Empirical analysis

As mentioned above, financial liberalization is difficult to measure. To address this concern, I use an array of available indicators of financial openness to identify periods during which different countries went from having their markets relatively closed to having them relatively open and vice versa. Specifically, I use three different indicators of financial openness,
Kaminsky & Schmukler, Miniane, and Chinn-Ito. First, I standardize each indicator on a scale from 2 to 1, with 2 being the most restrictive (high $\tau$) and 1 being the most liberalized (low $\tau$). Then, I construct an index for each country as the average of all three indicators for the years and countries available. Next, for each country, I check whether the constructed index suggests that there were periods during which the impediments to trade in foreign capital were relatively low. I identify a relatively open period such that it is at least 6 years long and, the value of the constructed index for each year is at least 15% lower than in any other year. Then I calculate consumption smoothing in the identified relatively open periods, if any, and compare it with consumption smoothing in the remaining period, provided that it is at least 6 years long. (The sample of countries and periods are shown in the Appendix C).

Out of 22 countries for which all the above indicators were available, I was able to define 8 developing and 10 developed countries that have experienced a relatively open (and, as a result, a relatively closed period) as defined above. In general, developed countries are more open than the developing ones. For example, Denmark had on average an openness indicator of 1.53 (2 being the most closed, 1 the most open) during the relatively closed period, and on average 1.05 during the relatively open period. In contrast, Brazil had an openness indicator of 1.94 during the closed period and 1.58 during the relatively open period. Thus, according to the model, consumption smoothing in Brazil and Denmark will respond differently to financial liberalization, provided that $\rho$ has not changed much in these two countries.

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8 The available indicators that I used are 1) Kaminsky and Schmukler from 1973-2002, which includes capital account, financial sector and stock market restrictions (available for 28 countries), 2) Miniane from 1983-2003, based on the disaggregated components of AREAER (available for 34 countries), and 3) Chinn-Ito from 1970-2003, which apart from capital account also includes measures of the presence of multiple exchange rates, current account restrictions and requirement of the surrender of export proceeds. For more detail see Appendix B.
To measure consumption smoothing, I follow Lewis (1996), and calculate the correlation between annual growth of real domestic output per capita demeaned by the aggregate of world output in each period and annual growth of consumption per capita. The choice of a country-specific variable with measurement error likely to be correlated with measurement errors in consumption smoothing will actually strengthen the case for consumption smoothing, when evidence is indeed supportive.

According to standard models of consumption smoothing, one would expect the correlation between domestic consumption and domestic output, \( \text{corr}(c,X) \), to be lower for relatively open periods and higher for relatively closed periods. I find that this is the case for only 3 out of 8 developing countries and again for only 3 out of 10 developed ones.\(^9\)

Next, I explore where each of these countries stands in terms of the framework. In particular, I investigate whether changes in the correlation of productivity shocks between the country and the rest of the world can help explain these puzzling findings, as suggested by the theoretical framework explained in Section 2. The analysis is preliminary and does not involve statistical or regression analysis, partly because of the limited number of countries for which all three openness indicators were available.

The evidence is indeed suggestive of such an explanation. I construct \( \rho \), the correlation of productivity shock processes between a given country and the rest of the world using annual TFP data from Bosworth and Collins (2003)\(^10\), where TFP is constructed as a residual from growth accounts equations. I first calculate bilateral correlations of TFP growth between the countries in the sample for each of the identified periods. Then, for each country I calculate a weighted

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\(^9\) It should be noted that in this study, as in Lewis (1996) controls only for World shocks in output, and does not take into account the idiosyncratic events that might have had an impact on the output and consumption of the country directly. For example, in Malaysia, after a crisis in mid 80’s, consumption has been following output more closely.

\(^10\) Data is available on the web at http://www.brookings.edu/views/papers/bosworth/20030922.htm
coefficient of the productivity shock correlation with the rest of the World, where the weights are the average import shares from each other country over the period 1980-2004, as shown in the Direction of Trade Statistics Yearbook.

A summary of results is presented in Table 1. Whereas standard theories we were able to explain only 3 out of 10 developed and only 3 out of 8 developing country experiences, accounting for cross-country productivity correlations helps explain what happened to consumption smoothing in 6 out of 10 developed countries and in 5 out of 8 developing ones.

Table 1: Impediments to Foreign Capital, Consumption Smoothing and Productivity Shock Correlation.

<table>
<thead>
<tr>
<th></th>
<th>Model Might Explain the apparent lack of risk sharing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard Theories</td>
</tr>
<tr>
<td>Developed Countries</td>
<td>3/10</td>
</tr>
<tr>
<td>Developing Countries</td>
<td>3/8</td>
</tr>
</tbody>
</table>

Note: See Appendix for details on countries, periods and productivity correlation shocks

Certain interesting observations can be made from these findings. First, the productivity shock correlation, \( \rho \), between a country and the rest of the world varies a lot between periods (see Tables 1A & 2A for more details; for example for Mexico the productivity shock correlation with the rest of the World more than doubled going from 0.17 to 0.36), suggesting that this correlation might be empirically relevant for the analysis\(^{11}\). Quantitatively, on average, the constructed correlation of productivity shocks between a country and the rest of the world, \( \rho \), is

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At the same time, this calls for cautious interpretation. As explained in Bosworth and Collins (2003), total factor productivity coming from growth accounts, as in this case, measures a combination of changes in efficiency in the use of capital and labor inputs, as well as changes in technology.
robust to the choice of the number of years in a period. The evolution of $\rho$ is similar for 7, 8, 9 and 10-year periods. Second, on average the developed countries are more open than the developing ones. According to the model this would mean that, everything else equal, one would not expect consumption smoothing to have changed by much in the latter group. This can possibly be an explanation of why studies like Kose, Prasad and Terrones (2003) are not able to find evidence of consumption smoothing for developing countries.

The simple framework developed above may help explain the apparent lack of risk sharing as countries get more financially integrated, once the actual level of financial openness and the correlation of productivity shocks with the rest of the world are accounted for. The study confirms that the developing countries are less open than the developing countries on average and shows that the correlation of productivity shock processes between a country and the rest of the world has changed substantially between periods. Preliminary evidence suggests that it may potentially be an important factor in explaining the effects of financial liberalization on consumption smoothing, potentially explaining what happened to consumption smoothing in a good portion of countries, and calls for more empirical investigation of these facts following the framework derived in Section 2 of this paper.

Conclusions:

This paper presents empirical evidence that supports the theoretical prediction that correlation between the productivity processes of a country and the rest of the world can explain why we fail to see improvements in consumption smoothing in developing countries as they get more financially liberalized. This study tries to highlight a direct link between theory and empirics, which the author feels is absent in the existent empirical studies in this area. Using a very simple
model, the author constructs a framework that relates impediments to foreign capital, correlation of productivity processes between two countries and consumption smoothing. Then, using an array of existing indicators, the study identifies countries that have had periods of relative high and relatively low financial liberalization, and shows preliminary evidence that the change in productivity shock correlation between a country and the rest of the world as it goes from a relatively open to a relatively closed period, might be one of the reason why we fail to observe consumption smoothing in some of these countries. A well defined empirical framework and a good measure of financial liberalization are essential in this literature.
Appendix A:

At the start of the period, the domestic household buys a fraction $\theta^f$ of the foreign tree, subject to the constraint:

$$\theta^f P + \theta^f P^* = P \Rightarrow \theta^f = \frac{P(1-\theta)}{P^*}$$

$P$ : price of the domestic tree  
$P^*$ : price of the foreign tree  

c(s) = \theta X(s) + \theta^f (1-\tau) Y(s)  
= \theta X(s) + P(1-\theta)/P^*(1-\tau)Y(s) 
(*)

The domestic household solves:

$$\text{Max}_\theta \{E \left[ u(c(s)) \right] \} \text{ s.t. } (*) \text{ and } \theta \leq 1$$

FOC $\theta : E \left[ u'(c(s)) X(s) \right] = P(1-\tau)/P^* E \left[ u'(c(s)) Y(s) \right]$ (provided $\theta < 1$)

Assumption: $X, Y$ are jointly (normally) distributed with equal means $\mu$ and equal variance $\sigma^2$. As a result, $P = P^*$

Then,

$$E \left[ u'(c) X \right] = (1-\tau) E \left[ u'(c) Y \right] \text{ where, } c = \theta X + (1-\theta)Y$$

cov ($u'(c), X) + E[u'(c)] E[X] = (1-\tau) \{cov (u'(c), Y) + E[u'(c)] E[Y] \}$

$$\Rightarrow \quad \theta = \frac{1 - \rho - \tau + \tau \mu/A\sigma^2}{(2-\tau)(1-\rho)}$$

Corr($c, X) = \frac{\text{cov}(c, X)}{[\text{std}(c) \text{ std}(X)]}$  

Var($c) = [2\theta^2 + 1 - 2\theta] \sigma^2 + 2(\theta-\theta^2) \rho \sigma^2$

Thus,

$$\text{Corr}(c, X) = \{ (1 - \mu/A\sigma^2) + (2\mu/A\sigma^2 - 1) 1/(2-\tau) + \rho - \rho/(2-\tau) \} \sigma_c$$

Appendix B:

Defining Financially Open and Financially Closed Periods of Liberalization

3 Indicators considered:

1. Chinn-Ito: Annual data for 163 countries from 1970-2004. An index based on the IMF AREAER binary series. 4 categories; $k_1$: presence of multiple exchange rates, $k_2$: restrictions on current account transactions, $k_3$: restrictions on capital account, $k_4$: requirement of the surrender of export proceeds. Each category is scored zero if restrictions exist and 1 if the restrictions are non-existent.

SHARE$_{k_3, t} = (k_{3,1} + k_{3,1-1} + k_{3,1-2} + k_{3,1-3} + k_{3,1-4})/5$ is constructed, and the Chinn-Ito index of financial openness equals the first standardized principal component of $k_{1, t}$, $k_{2, t}$, SHARE$_{k_3, t}$ and $k_{4, t}$. By construction this indicator has zero mean.

This indicator is rescaled from 2 to 1, where the most closed country scores 2 and the most open country scores 1.
2. Kaminsky and Schmukler: Monthly data for 28 countries, both mature and emerging economies from 1973-2002. It includes G-7, European, Asian and Latin American countries. 3 categories: Capital account, domestic financial system and stock market openness. Each category takes values of 1, 2 or 3 with 1 being the most closed and 3 being the most open. Then, a simple average of these three categories is calculated to define the index of financial liberalization.

The sources of information include the IMF publications *Exchange Rate Arrangements and Restrictions* and *Recent Economic Developments* (country reports), the IFC publication *Emerging Markets Database*, and the Organization for Economic Cooperation and Development (OECD) publication *Economic Survey*, as well as various reports by the Economist's Intelligence Unit, the World Bank, annual reports of central banks, and research papers with chronologies on financial market restrictions.

A yearly index is constructed by averaging the monthly indices for each year from 1973 to 2002, and then, the indicator is rescaled from two to one with two representing the most closed and one the most open.

3. Miniane: Annual data on 34 countries from 1983-2004. The five continents are represented. Countries range from poor (India, Ecuador) to very rich (Germany, Japan, etc), with intermediate cases like Chile or Mexico. The whole spectrum of exchange rate arrangements is covered.

It includes 13 subcategories of capital account + presence of multiple exchange rates. The sole source is the IMF AREAER, making use not only of the binary information on capital account restrictions, but also of the reports associated with each case. The indices do not disaggregate beyond the 13 main subcategories of capital account transactions in the post-1996 classification. Moreover, they do not separate between controls of inflows and outflows. The coding of a dummy was done through explicit information in the text and through logical induction. A full 25 percent of the dummies for the early 1980s were coded through logical induction because of a lack of explicit indications. A simple average of the dummies in each category is reported as the capital openness indicator.

This indicator is rescaled from 2 to 1, with 2 being the most closed and 1 the most open.

Next, the author calculates an index for each country as the average of all these three indicators for the years and countries available.

Definition of algorithm to differentiate between relatively open and relatively closed periods:

First, standardize the indicators in a scale from 2 to 1, with 2 being the most restrictive and 1 being the most liberalized.

Let [A, B] define the closed period, and [C, D] define open period. Then,

1. [A, B] and [C, D] are at least 6 years long,
2. Every element in [C, D], open period, is at least 15% greater than every element in [A,B], closed period.
All three indicators are available for only 22 countries from year 1983-2002. They are Argentina, Brazil, Canada, Chile, Colombia, Denmark, Finland, France, Germany, Hong Kong, Italy, Japan, Korea, Malaysia, Mexico, Norway, Philippines, Portugal, Spain, Sweden, UK, US.

Appendix C:

Data for consumption and output is taken from WDI. In Tables 1A & 2A above there are 8 developing and 10 developed countries for which all the three indicators are available and we were able to define relatively open and relatively closed periods. First column lists the countries. Second column shows specific periods during which the country’s constructed financial liberalization index changes by more than 15 percent. Third column shows what happened to this index between the two periods. Fourth column shows the value of the selected measures of consumption smoothing in these periods and the last column shows the values of the calculated productivity correlations with the rest of the world for the country in each of the defined periods.

Table 1A: Impediments to Foreign Capital, Consumption Smoothing and Productivity Shock Correlation, Developing Countries.

<table>
<thead>
<tr>
<th>Countries</th>
<th>Periods</th>
<th>Impediments to Capital, $\tau$</th>
<th>Corr(c,X)</th>
<th>$\rho$(Rho)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>80-87</td>
<td>1.94</td>
<td>0.83</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>96-03</td>
<td>1.58</td>
<td>0.69</td>
<td>0.11</td>
</tr>
<tr>
<td>Chile</td>
<td>83-89</td>
<td>1.89</td>
<td>0.84</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>99-03</td>
<td>1.42</td>
<td>0.78</td>
<td>0.05</td>
</tr>
<tr>
<td>Philippines</td>
<td>83-91</td>
<td>1.77</td>
<td>0.88</td>
<td>-0.02</td>
</tr>
<tr>
<td></td>
<td>94-02</td>
<td>1.52</td>
<td>0.06</td>
<td>0.32</td>
</tr>
<tr>
<td>Korea</td>
<td>82-87</td>
<td>1.90</td>
<td>0.33</td>
<td>-0.01</td>
</tr>
<tr>
<td></td>
<td>88-03</td>
<td>1.66</td>
<td>0.92</td>
<td>0.13</td>
</tr>
<tr>
<td>Mexico</td>
<td>83-88</td>
<td>1.92</td>
<td>0.74</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>92-02</td>
<td>1.40</td>
<td>0.87</td>
<td>0.36</td>
</tr>
<tr>
<td>Argentina</td>
<td>82-88</td>
<td>1.88</td>
<td>0.96</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>90-00</td>
<td>1.27</td>
<td>0.94</td>
<td>0.05</td>
</tr>
<tr>
<td>Colombia</td>
<td>83-89</td>
<td>1.90</td>
<td>0.40</td>
<td>-0.14</td>
</tr>
<tr>
<td></td>
<td>96-02</td>
<td>1.64</td>
<td>0.78</td>
<td>-0.13</td>
</tr>
<tr>
<td>Malaysia</td>
<td>73-78</td>
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<td>-0.59</td>
<td>0.35</td>
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<tr>
<td></td>
<td>82-97</td>
<td>1.21</td>
<td>0.57</td>
<td>0.13</td>
</tr>
</tbody>
</table>

The first three rows of Table 1A show developing countries for which consumption smoothing improved as they became more liberalized. These would be the cases that follow the predictions of standard theories. Lines 4 and 5 (Korea and Mexico in bold) are an example of cases where consumption smoothing deteriorated while the countries liberalized and this can be possible explained because of an increase in the productivity shock correlation with the rest of the world (column 5). Line 6 (in bold and italics) shows what happened in Argentina. Although the country liberalized, consumption smoothing and $\rho$ almost did not change. The explanation in this case may be because the actual level of impediments to trade in foreign capital was still high. This is not included in Table 1 in text as it is not explained by $\rho$ as the other cases. The rest of the rows in Table 1A show the other countries that could not be explained by this simple model.
Table 2A: Impediments to Foreign Capital, Consumption Smoothing and Productivity Shock Correlation, Developed Countries.

<table>
<thead>
<tr>
<th>Countries</th>
<th>Periods</th>
<th>Impediments to Capital, $\tau$</th>
<th>Corr(c,X)</th>
<th>$\rho$(Rho)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>82-87</td>
<td>1.53</td>
<td>0.88</td>
<td>0.35</td>
</tr>
<tr>
<td></td>
<td>89-03</td>
<td>1.05</td>
<td>0.63</td>
<td>0.32</td>
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<td>Italy</td>
<td>83-89</td>
<td>1.52</td>
<td>0.92</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>93-03</td>
<td>1.07</td>
<td>0.78</td>
<td>0.40</td>
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<tr>
<td>Norway</td>
<td>80-87</td>
<td>1.67</td>
<td>0.36</td>
<td>0.24</td>
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<tr>
<td></td>
<td>93-03</td>
<td>1.13</td>
<td>0.01</td>
<td>0.33</td>
</tr>
<tr>
<td>Finland</td>
<td>73-85</td>
<td>1.69</td>
<td>0.32</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>90-03</td>
<td>1.10</td>
<td>0.51</td>
<td>0.20</td>
</tr>
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<td>Spain</td>
<td>83-91</td>
<td>1.51</td>
<td>0.88</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>93-03</td>
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<td>0.91</td>
<td>0.33</td>
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<td>Sweden</td>
<td>73-83</td>
<td>1.50</td>
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<td>0.21</td>
</tr>
<tr>
<td></td>
<td>94-03</td>
<td>1.12</td>
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<td>0.66</td>
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<tr>
<td>France</td>
<td>73-84</td>
<td>1.61</td>
<td>-0.34</td>
<td>0.53</td>
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<td></td>
<td>94-03</td>
<td>1.09</td>
<td>0.72</td>
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<td>Japan</td>
<td>73-80</td>
<td>1.60</td>
<td>0.71</td>
<td>0.32</td>
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<td></td>
<td>84-03</td>
<td>1.16</td>
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<td>Portugal</td>
<td>80-85</td>
<td>1.89</td>
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<td></td>
<td>93-03</td>
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<td>0.82</td>
<td>0.05</td>
</tr>
<tr>
<td>UK</td>
<td>73-78</td>
<td>1.64</td>
<td>0.73</td>
<td>0.54</td>
</tr>
<tr>
<td></td>
<td>79-03</td>
<td>1.03</td>
<td>0.83</td>
<td>0.08</td>
</tr>
</tbody>
</table>

The first three rows of Table 2A show developed countries for which the predictions of standard theories we observed. Lines 4, 5 and 6 (in bold) are examples of cases where consumption smoothing deteriorated while the countries liberalized and this can be possible explained because of an increase in the productivity shock correlation with the rest of the world (column 5). The rest of the rows in Table 1A show the other countries that could not be explained by this simple model.
References:


Jacques Miniane, "A New Set of Measures on Capital Account Restrictions," IMF Staff Papers, vol. 51 n.2