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# Culture and current account balances\*

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## Abstract

This paper contributes to the literature of current account balances by introducing cultural variables that until now have been omitted. The World Values Survey indicates that the Roman Catholics do not consider thrift as important as others. We propose that Catholic countries tend to run current account deficits. This result remains robust even if we control for close to all of the determinants that have been included in previous studies. We find evidence that the inclination of Catholic countries to have high levels of uncertainty avoidance goes to a great length in explaining the result.

**Keywords:** current account; culture; religion

**JEL classification:** F21; F41; Z1

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# 1 Introduction

We analyze the medium-term determinants of current account balances. Our contribution to the existing literature is the following: we introduce culture as a fundamental factor that may be important but has, until now, been unrecognized. We argue that countries with higher proportion of Roman Catholics tend to be capital importers. This seems to result from cross-country differences in uncertainty avoidance.

It may seem that current account balances and religion are unrelated. The following three observations made us to question this common wisdom: Firstly, Guiso et al. (2006) and De Castro Campos et al. (2013) provide evidence that individual preferences concerning the value of teaching thrift to children explains large part of the cross-country differences in national (or private) saving. Secondly, according to World Values Survey Catholics do not consider thrift as important as others (see Table 1). Thirdly, Europe is divided into Protestant North and Catholic South and this division seems to coincide with net lending North and net borrowing South (see Figures 1–2).

|Table 1. |

|Figure 1. |

|Figure 2. |

## 2 Literature

There is a vast literature on medium-term determinants of current account balances (see, e.g., Chinn and Prasad (2003), Chinn and Ito (2007), Gruber and Kamin (2007), Ca' Zorzi et al. (2012), Lo Prete (2012)). The standard set of explanatory variables in this literature covers government budget balance, dependency ratios, relative income level, GDP per capita growth, terms of trade volatility, fuel exports, net foreign asset position and variables measuring institutional quality.

## 3 Results

Methodologically we content to follow the previous studies: we use pooled OLS, 5-year nonoverlapping averages and control for the so-called rest of the world effect. We have included all countries, 77 in total, for which we have data on the pre-crisis period (1993–2007). At first we run the baseline model of current account balances and in specification (1) we are able to replicate the typical results from previous studies (see Table 2). When we include religious denominations in our model, we proceed from a broad denomination (Christianity) to a more precise denomination (Catholics)<sup>1</sup>. The deterioration effect of Christianity on current account balances is driven by Catholics. Our model predicts that the current account surplus (deficit) of a fully Catholic country is 2.0 percent of the GDP smaller (larger) than a non-Catholic country.

[Table 2. |

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<sup>1</sup>Notice that there are plenty of small religious denominations that are found in only one or a few countries. In such cases it is trivial to find statistically significant results for religious denominations.

Both Akaike and Schwarz information criteria indicate that we should include our religious variable even if we control for all other determinants (see Table 3). Consequently, the result concerning the share of Catholics was not an accident. We did consider that the relationship between Catholics and current account balances might be nonlinear; however, because the squared term did not turn out to be statistically significant and a two-way scatterplot indicated a linear relationship between these two variables, we were satisfied with the linear model.

[Table 3. |

It is an interesting result that Catholic countries tend to run current account deficits. However, we should go further and try to understand why this is the case. Naturally the share of Catholics per se does not affect current account balances. There must be some aspect of underlying culture that this variable is grasping. Hofstede's database on dimensions of national cultures has been used widely to measure differences in national cultures. While individualism, masculinity, and power distance are all unrelated to current account balances, it turns out that there is a strong negative relation between uncertainty avoidance and current account balances (see Table 4). On the other hand, it is well documented there is a strong positive correlation between uncertainty avoidance and the share of Catholics (see, e.g., Hofstede (2001, 198-200)). If both the uncertainty avoidance index and Catholics are included into the set of explanatory variables, the latter becomes statistically insignificant.<sup>2</sup> The interpretation is clear: at least to some extent it is this inclination to uncertainty avoidance of Catholics that causes the negative

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<sup>2</sup>Notice that the number of observations decreases, when uncertainty avoidance index is included.

relationship between current account balances and the share of Catholics. In other words, with regard to current account balances our two variables Catholics and Uncertainty avoidance are measuring the very same things.

[Table 4. |

## 4 Conclusions

We found evidence of a fundamental determinant of current account balances that previous studies have omitted: culture. In our regressions, the variable measuring the proportion of Catholics in the population was negatively and significantly associated with current account balances. Our result remained fairly robust although we controlled for almost all the variables that have been included in previous studies. Our finding has practical implications: compared to non-Catholic countries, Catholic countries tend to have larger current account deficits or smaller current account surpluses by 2 percent of the GDP. This is comparable to the effect of 6 percent of GDP deterioration in the budget balance. We do not assert that all Catholic countries run current account deficits all the time. The share of Catholics seems to be one factor among many others that affects current accounts.

After using Hofstede's measures of culture we found out that in Catholic countries uncertainty avoidance is relatively high and that there is a negative relation between uncertainty avoidance and current account balances. This inclination of Catholics to uncertainty avoidance seems to explain at least partially why Catholic countries tend to

be capital importers. However, this issue needs to be examined more in depth in the future.

## 5 Funding

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## 6 Appendix: Data sources

[Table A1. |

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**Table 1. Comparing Catholics to other religious groups (World Values Survey)**

| Variable   | Catholics                       |                         | Other groups                    |                          | Comparison            |
|--|---------------------------------|-------------------------|---------------------------------|--------------------------|-----------------------|
| What should children learn 1:<br>thrift                      | Proportion:<br>0.198<br>(0.003) | Observations:<br>22 051 | Proportion:<br>0.268<br>(0.002) | Observations:<br>49 546  | z-stat:<br>-20.044*** |
| Important child qualities: thrift<br>saving money and things | Mean:<br>0.336<br>(0.002)       | Observations:<br>54 534 | Mean:<br>0.383<br>(0.001)       | Observations:<br>168 198 | t-stat:<br>-20.284*** |

**Table 2. Extending the baseline model of current account balances**

| Dependent variable<br>Specifications | Current account balance (ratio to GDP) |                     |                      |
|--------------------------------------|--|---------------------|----------------------|
|                                      | (1)                                    | (2)                 | (3)                  |
| Budget balance                       | 0.403***<br>(0.128)                    | 0.434***<br>(0.129) | 0.396***<br>(0.123)  |
| Dependency ratio (old)               | -0.029<br>(0.020)                      | -0.019<br>(0.019)   | -0.027<br>(0.020)    |
| Dependency ratio (young)             | -0.018<br>(0.014)                      | -0.014<br>(0.013)   | -0.017<br>(0.013)    |
| Relative income                      | 0.079***<br>(0.029)                    | 0.074**<br>(0.029)  | 0.069**<br>(0.029)   |
| Growth                               | -0.377**<br>(0.165)                    | -0.425**<br>(0.166) | -0.434***<br>(0.162) |
| Terms of trade volatility            | 0.001<br>(0.001)                       | 0.001<br>(0.001)    | 0.001<br>(0.001)     |
| Fuel exports                         | 0.021<br>(0.019)                       | 0.015<br>(0.020)    | 0.016<br>(0.019)     |
| NFA position                         | 0.059***<br>(0.011)                    | 0.058***<br>(0.010) | 0.060***<br>(0.010)  |
| Private credit                       | -0.019<br>(0.017)                      | -0.024<br>(0.018)   | -0.024<br>(0.017)    |
| Regulatory quality                   | -0.060**<br>(0.025)                    | -0.065**<br>(0.025) | -0.061**<br>(0.026)  |
| Voice and accountability             | -0.047**<br>(0.023)                    | -0.027<br>(0.021)   | -0.040*<br>(0.022)   |
| Trade openness                       | 0.002<br>(0.005)                       | 0.002<br>(0.004)    | 0.002<br>(0.004)     |
| Capital account openness             | -0.003<br>(0.003)                      | -0.001<br>(0.003)   | -0.001<br>(0.003)    |
| Christians                           |  | -0.025**<br>(0.010) |                      |
| Catholics                            |  |                     | -0.019**<br>(0.009)  |
| Time period dummies                  | Yes                                    | Yes                 | Yes                  |
| R <sup>2</sup>                       | 0.627                                  | 0.640               | 0.637                |
| Observations                         | 210                                    | 210                 | 210                  |

*Notes* : In addition all regressions include a constant. Panel robust standard errors are in the parenthesis. The number of observations refers to the number of 5-year nonoverlapping averages. \*, \*\*, \*\*\* denote statistical significance at 10%, 5% and 1% levels.

**Table 3. Information criteria for different combinations of explanatory variables**

| Set of explanatory variables  | Best model (Akaike)  | Best model, if religious variable is excluded (Akaike)  | Best model (Schwarz)  | Best model, if religious variable is excluded (Schwarz)   |
|---|--|---|---|---|
| Budget balance,<br>Dep. ratio (old),<br>Dep. ratio (young),<br>Rel. income, Growth,<br>ToT volatility, Fuel exports,<br>NFA position, Private credit,<br>Regulatory quality,<br>Voice and accountability,<br>Trade openness,<br>Capital account openness,<br><i>Catholics</i> | Budget balance,<br>Rel. income,<br>Growth,<br>Fuel exports,<br>NFA position,<br>Regulatory quality,<br>Voice and accountability,<br><i>Catholics</i> | Budget balance,<br>Rel. income,<br>Growth,<br>Fuel exports,<br>NFA position,<br>Regulatory quality,<br>Voice and accountability | Budget balance,<br>Rel. income,<br>Growth,<br>Fuel exports,<br>NFA position,<br>Regulatory quality,<br><i>Catholics</i> | Budget balance,<br>Rel. income,<br>Growth,<br>Fuel exports,<br>NFA position,<br>Regulatory quality,<br>Voice and accountability |
| (14 variables and 16383 models in total)  | value: -763.771<br>rank: 1.  | value: -759.229<br>rank: 139.   | value: -735.614<br>rank: 1.   | value: -732.452<br>rank: 5.   |

**Table 4. Current account balances using Hofstede cultural dimension**

| Dependent variable  | Current account balance (ratio to GDP) |                     |                      |
|---|--|---------------------|----------------------|
|   | (4)                                    | (5)                 | (6)                  |
| Specifications  |  |                     |                      |
| The same set of control variables as in specification (3) | Yes                                    | Yes                 | Yes                  |
| Catholics   | -0.020**<br>(0.009)                    | -0.015<br>(0.009)   |                      |
| Uncertainty avoidance                                     |  | -0.034**<br>(0.017) | -0.044***<br>(0.016) |
| Time period dummies                                       | Yes                                    | Yes                 | Yes                  |
| R <sup>2</sup>  | 0.706                                  | 0.713               | 0.708                |
| Observations  | 174                                    | 174                 | 174                  |

*Notes* : In addition all regressions include a constant. Panel robust standard errors are in the parenthesis. \*\*, \*\*\* denote statistical significance at 5% and 1% levels.

**Table A1.**

| Variable                  | Source <sup>a</sup>   |
|---------------------------|---|
| Current account balance   | WDI , WEO   |
| Budget balance            | WDI, WEO, IFS, GFS, OECD, Eurostat, IFS yearbook, AFDB, AMF, EBRD |
| Dependency ratios         | WDI   |
| Relative income           | WDI, WEO/IFS  |
| Growth                    | WDI, WEO  |
| Terms of trade volatility | WDI, WEO  |
| Fuel exports              | WDI, WEO2013, OPEC  |
| NFA position              | LM  |
| Private credit            | BD, WDI   |
| Regulatory quality        | PRS   |
| Voice and accountability  | PRS   |
| Trade openness            | WDI, IFS/WDI  |
| Capital account openness  | CI  |
| Christians                | McCleary  |
| Catholics                 | McCleary  |
| Uncertainty avoidance     | Hofstede  |
| Table 1                   | WVS   |
| Figures 1–2 (shape file)  | TM  |

<sup>a</sup> AFDB: African Development Bank Group; AMF: Arab Monetary Fund; BD: Financial institutions and markets across countries and over time by Beck and Demirgüç-Kunt (2009); CI: A new measure of financial openness by Chinn and Ito (2008); EBRD: European Bank for Reconstruction and Development; Eurostat; GFS: Government Finance Statistics; IFS: International Financial Statistics; Hofstede: <<http://www.geerthofstede.com/media/651/6%20dimensions%20for%20website.xls>>; IFS yearbook: International Financial Statistics Yearbook 1998; LM: updated and extended version of the External Wealth of Nations Mark II database by Lane and Milesi-Ferretti (2007); McCleary: Religion Adherence Data by McCleary; OECD: OECD Economic Outlook 88 database; OPEC: Annual Statistical Bulletin 1999; PRS: Political Risk Services' International Country Risk Guide (free of charge version); TM: <[http://thematicmapping.org/downloads/world\\_borders.php](http://thematicmapping.org/downloads/world_borders.php)>; WEO: World Economic Outlook Database, October 2010; WEO2013: World Economic Outlook Database, April 2013; WDI: World Development Indicators; WVS: World Values Survey.