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ABSTRACT

Like Father like Sons? The Cost of Sovereign Defaults In Reduced Credit to the Private Sector*

This paper investigates the impact of sovereign defaults on the ability of the corporate sector in emerging nations to finance itself abroad. The hypothesis here is that defaults have a negative spillover effect on the private sector through credit rationing. We explore a novel dataset covering the vast majority of corporates and municipals in emerging nations that received foreign capital between 1880 and 1913. The detailed nature of the data allows us to explore variation between countries and economic sectors. The results confirm that rationing existed, was very large, and persisted long beyond the solution of the original default problem. Therefore, the private sector in emerging countries paid a severe reputational cost for the debt intolerance of their governments, with possible implications for the growth prospects of these nations.

JEL Classification: F32, F34, H63, N10 and N20
Keywords: credit rationing, foreign investment, pre-1914 and sovereign default

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Submitted 15 January 2013

1. Introduction

The fact that the source of the proverb 'Like father like son(s)' is lost in time attests to the pervasiveness of the assumption that children often inherit, through nature or nurture, their parent's manners and habits –usually the bad ones. Emerging nations usually 'emerge' into the international financial markets by the hand of their governments. Sovereigns are often the first, and frequently the only, entities able to sell their bonds to foreign investors or to borrow from international banks. Later, private firms and municipals enter the international market to sell their own securities or attract FDI from foreign companies. In this sense, sovereigns are the parents in the story of this paper, while the private sector follows on as children.

Our objective in writing this paper was to investigate whether this common proverb was also currency among foreign investors, who considered applying their funds in emerging and developing nations. We chose to study this question in the context of a period of untrammelled cross-border capital flows and heightened financial integration in the three decades prior to World War I. Contrary to the prevalence today of 'North-North' and 'upstream' capital flows, the world before 1914 conformed to the most basic predictions of the Solow model for the direction of capital movements. The bulk of capital exchanges between nations involved rich developed European countries exporting large surplus savings to capital-poor, but resource-rich nations and colonies all over the World. Not all this investment came to fruition, however. As today, credit booms were invariably followed by busts and painful deleveraging among net borrowers. The governments of some of these nations attempted to deleverage by force by defaulting on their external debts. Sovereign defaults, of course, being as old as sovereign debt, creditors were not exactly caught by surprise nor were they impotent against bad debtors. In the absence of an international bankruptcy law enforceable on foreign sovereigns, creditors mobilised an array of enforcement mechanisms to reduce the outside but especially the inside option of a defaulter. Credit embargoes, which have a prime role in the standard theory of sovereign debt, also routinely followed any default in the period we are considering. Both in theory as in history, there is a presumption that these embargoes, or the revision up of the risk level of the country, applied not only to the impecunious sovereign itself but also to the private sector. In so doing, the option value of defaulting was lowered even more for the tempted sovereign.

The question is whether this rationing of credit and investment in the private sector were a mere element in the overall penalty imposed on the sovereign, who was naturally not indifferent to the condition of the economy, or whether it expressed a reputational loss for the private sector that extended beyond the repeated game played between sovereign and foreign creditors. Forcing a bit our metaphor, were children punished to harass their parents or did people assume that they had inherited the sins of their progenitors?

The hypothesis of this paper is that defaults have a negative spillover effect on the private sector through credit rationing. To test it, we explore a novel dataset covering the vast majority of corporates and municipals in emerging nations that received foreign capital between 1880 and 1913. The detailed nature of the data allows us to explore variation between countries and economic sectors. The presence of rationing, especially if persisting even after defaults had been settled would be suggestive evidence to explain the long-term costs of financial volatility to the 'real economy.' In a recent synthesis, Reinhart and Rogoff (2009) quantified these costs in terms of lost output, increased unemployment, and drop in the value of banking assets and household wealth. A related and vexed question is the impact of financial crises on the growth rate of countries exposed to international integration. While it is impossible here to review the very extensive literature on the relation between growth and finance, we believe that our findings are also relevant to this body of research, inasmuch as the identification of persistent rationing of investment projects by the private sector of emerging nations could conceivably reduce their rate of growth.[1]

The paper is organised as follows. The next section briefly reviews the literature to which we make an explicit contribution. Section 3 details the nature and composition of the data, and the empirical methodology used to study our question. The results of the main models, as well as some preliminary evidence and further robustness tests, follow in section 4. Section 5 concludes.

2. Literature Review: Sovereign Defaults and Lending to the Private Sector

There are two main strands in the literature –both contemporary and historical– to which we can relate the present paper. The first is the extensive empirical investigation of the determinants of emerging market sovereign spreads. Default status and past repayment record figure prominently, as it was to be expected, among the determinants of the spreads of emerging economies since the 1970s (Eichengreen et al. 2001, Gelos et al. 2004, Kaminsky et al. 1998, Mody et al. 2001). Similar results were found for the historical period before World War I, on which we concentrate our analysis (Flandreau et al. 2004, Mauro Sussman and Yafeh 2006, Accominotti et al. 2011). After controlling for economic fundamentals (macro and micro) as well as political variables, this literature concludes that defaults have a large and very persistent impact on spreads. For instance, Özler (1993) found that countries that defaulted in the 1930s still paid spreads 12 to 60 basis points higher in the 1970s. A more extreme version of this punishment for defaults, credit rationing (total market exclusion), was more applied in this historical period than it seems to be today (Sturzenegger and Zettelmeyer 2006, Tomz 2007). In any case, this empirical evidence is consistent with the seminal contributions to the theory of sovereign debt, which emphasise the need for punishments as deterring mechanisms from default (Eaton and Gersovitz 1981, Bulow and Rogoff 1989, Kletzer and Wright 2000).

A natural question, taken up by a second body of research, is whether this penalty extends to the private sector of the economy. The literature considers several possible mechanisms for this extension, namely, credit rationing to the private sector, trade and diplomatic sanctions, and a pure reputational

[1] Not everyone agrees that access to foreign capital accelerates growth. For such an argument based on the classical Solow model see Gourinchas and Jeanne (2006). For an extended survey of the literature and of its empirical pitfalls see Kose et al. (2006).

effect, whereby the lack of creditworthiness of the sovereign taints the general reputation of the country (Cole and Kehoe 1998). Trade sanctions, namely through the rationing of short term trade credit, were initially studied by Rose and Spiegel (2002) in the context of gravity equations for trade. Mitchener and Weidenmier (2010) tried replicating the same methodology for the period before World War I but found no evidence of trade sanctions. Instead, the authors found a large and significant effect of diplomatic and military 'super-sanctions' on trade flows of defaulting nations. With a different methodology, Flores (2010) reaches a different conclusion, emphasising the importance of financial intermediaries that were simultaneously active as underwriters of sovereign bonds and providers of trade credit.

However, the avenue that interests us here is the rationing of the access of the domestic corporate sector to long-term credit and investment from abroad in the wake of a default. The literature on this topic is heavy on empirical studies but less so on theoretical grounding. To our knowledge, only two papers provide a theoretical mechanism for this spillover effect from sovereign defaults to credit decline to the private sector. There is, to be sure, a related literature on the costs of defaults to the private sector, but which assumes that the mechanism is driven by the balance sheet effects of the ownership of sovereign debt by the domestic sector (Broner and Ventura 2010, Guembel and Sussman 2009). In the absence of this link, Andrade (2009) and Sandleris (2010) focus on the informational content of sovereign debt and its impact on the wholesale market for domestic private credit. Specifically, Andrade (2009) works out a relation between the P/E ratios of domestic stock and the average sovereign spreads, as these provide information on the likelihood of a disruptive period of sovereign debt renegotiations. Sandleris's (2010) analysis departs from a similar intuition where foreign creditors cannot sanction defaults and where are no reputational effects of a default (mechanically, since he uses a finite time game). Despite this, sovereigns are still incentivised to repay in good states, eschewing strategic defaults, because of the consequences of defaults to the private sector. In reaching this conclusion, the author further assumes a benevolent sovereign, who maximizes a social welfare function, and has private information about the state of the economy at the time it has to decide to repay its debt or default. The debt payment decision is then incorporated into the private agents' beliefs about the state of the economy. In a bad state, it is less costly for society to default, but the default signals the bad state to private agents. This then has two competing effects: entrepreneurs reduce their demand for funds (what the author calls an 'investment channel') and creditors reduce their willingness to lend ('credit channel'). In other words, the first effect reduces demand for capital by private investors, whereas the second contracts the supply of funds. Depending on which channel is stronger, the domestic cost of capital may rise of fall, but private agents will still be rationed out of funds, leading to an inefficiently low level of private investment after a default. Essentially, this model yields predictions which are observationally equivalent to the more standard models of punishment of defaults, but for different reasons. The domestic corporate sector is not rationed out of credit as a consequence of the direct penalties against the sovereign (à la Bulow and Rogoff 1989), but because of the informational content of defaults about the economic fundamentals that drive returns in the private sector. Apart from foreign credit rationing, Sandleris's model also predicts the possibility of a domestic credit crunch. Perhaps in a bit contrived fashion, the author assumes that domestic entrepreneurs can only invest in their projects financed in foreign currencies. This then imply that local financial intermediaries use their borrowing capacity from abroad (limited by the collateral they can post) to re-lend to entrepreneurs. A default, by constraining the credit ceilings to entrepreneurs *and* intermediaries alike would then provoke a collapse of domestic credit, even if local intermediaries still had sound collateral they could use to leverage their lending to local investors. Perhaps a better way of interpreting this result is to relate it to the literature on financial development and capital account openness. This research has converged on to the consensus that the more liquid and developed local financial markets are, the lesser the negative consequences from financial crises.

Empirical papers in this line separate between studies testing the impact of sovereign spreads on corporate spreads or borrowing and other research directly testing the crowding out (or in) of private borrowing from abroad through government borrowing. Starting with the first, the doctrine of 'sovereign ceiling,' popular in the finance literature, is precisely predicated on this link. According to this rule, private debtors cannot have a better credit (and lower costs of external finance) than their sovereign, and there is some empirical evidence to that fact in the pricing of corporate bonds in emerging nations (Cavallo and Valenzuela 2010, Grandes et al. 2010). Other authors have tested for the direct impact of defaults or market measures of sovereign risk (spreads and ratings) on capital inflows to private corporations. These papers uniformly find a strong negative impact of sovereign risk on lending to the corporate sector (Kaminsky and Schmukler 2002, Reinhart and Rogoff 2004, Das et al. 2010). On the contrary, the few papers that test for a substitution (crowding out) between private and government borrowing from abroad have rejected the hypothesis (Das et al. 2010, Clemens and Williamson 2004). In fact, the latter authors found evidence of crowding *in* before World War I, suggesting that government investment financed with foreign capital might have attracted further external financing of private investment.

Indeed, in the period we study governments of emerging nations were the dominant international borrower. Between the early 1880s and 1913, fully one third of all British capital exports and half of the German equivalent were invested in sovereign bonds around the World, and the French figure should not have been below (Esteves 2007a). Moreover, the fact that governments often acted as guarantors of the investment in infrastructure and public utilities (by offering land grants, subsidies, or minimum return guarantees) blurs the division between 'government' and 'private' investment (Eichengreen 2003). Be as it may, the present paper contributes to our knowledge of the relation between sovereign risk and access to foreign capital by domestic corporates by focusing on the pre-1914 era of financial globalisation.

A first innovation of the paper is to use a more extended dataset of international capital exports than what has been available so far. Specifically, we combine the data on British capital exports, published by Stone (1999) and used by all other authors studying the same period, with novel datasets of the equivalent flows from the two other large capital exporters of the time: France and Germany (Esteves 2007a and 2011a).

Methodologically, our investigation is close to the work of Arteta and Hale (2008) and Hale and Arteta (2007), who use panel data regressions to test for the contemporary and delayed effects of sovereign crises on the private sector's access to foreign credit and investment. After controlling for other determinants of access to credit, the authors find a 20% drop in foreign credit to private firms in emerging markets after a default. The paper that comes closer to testing the same effect in the historical period is Flores (2011) without finding a significant effect of sovereign risk on British capital inflows to private firms. The author tentatively concludes from here that "the impact of defaults on capital flows and the general economic activity may have therefore been overestimated" (p. 20). Whilst we find the implication interesting, it is hard to understand how the historical evidence would depart so markedly from the contemporary one. We also think that there is some room for improvement in the empirical exercise in this paper, particularly in terms of dealing with endogeneity, omitted variables, and multicollinearity concerns. For instance, sovereign spreads and a default dummy are simultaneously included in the regressions, even though they are bound to be very correlated. In contrast, we mobilise a larger set of potential covariates but take heed of their correlation by using factor analysis. Moreover, Flores (2011) did not have access to the information on French and German private investments and may therefore be missing up to half of the action. Finally, the author only tries to measure the contemporary effect of defaults, whereas we also quantify the delayed (or 'memory') impact of defaults on private credit rationing after the rescheduling agreements had been signed and the sovereign was free to re-finance itself in the international market.

3. Data and Empirical Approach

3.1 Reduced Form Specifications

Our dataset comprises information on the status of sovereign debt, foreign capital flows to the corporate sector, as well as economic and political controls, and indicators for other types of financial disturbances (banking crises and sudden stops) for a panel of 29 countries and territories over the period 1880 to 1913. The cross section is essentially composed of independent sovereigns throughout the period under consideration (22), joined by 6 other dependent territories with varying degree of self-rule. It should be noted that some territories changed status in our sample period, for instance, Australia moved from a set of self-governing colonies to a sovereign Dominium with federation in 1901, while Egypt lost its effective independence (though within the formal Ottoman suzerainty) when turning into a British protectorate in 1882. It may seem peculiar to include colonies in our study, given that they were virtually incapable of defaulting on their colonial debts. However, apart from adding up to the control group of non-defaulting sovereigns, their inclusion serves to quantify possible contagion effects from defaults of neighbouring non-dependent territories on to the flow of capital to these territories. That is to say, the control group in our regressions includes economies (colonies) with similar economic structures to those of some of the defaulting nations, so that the estimates represent country-specific penalties and not penalties by groups of nations, defined by geography, endowments or other observable characteristics. Therefore, our estimates should net out as much as possible contagion effects. In any case, the empirical results that we will describe below are not affected by the exclusion of the limited set of colonies from the sample. Similarly, the tone of the estimates is the same when we concentrate only on countries that defaulted. Because of missing data, the full usable set of observations is 871. Table 1 lists the territories included, the period covered for each, as well as their status.

Table 1 around here

Table 1 also classifies countries in emerging/developing and developed nations. This classification will be used later mostly for practical purposes and is not based on a specific GDP threshold.[2] The final column lists the periods under default in our sample, which represent a total of 66 country-years or 8% of the total panel.

Before describing the empirical methodology, it is interesting to get a first feel of the effect by plotting the coefficients of a simple descriptive regression of private capital inflows against time indicators for defaults and for three years before and three years after each default. Panel A of Figure 1 clearly suggests that private firms were hurt by defaults as they got access to less £2 million, on average, from abroad during a period of sovereign default. Since the omitted categories are 'normal' years away from default episodes, there is also seeming evidence of credit booms in advance of sovereign defaults. That is to say, booms that ended up in a default extended not only to the sovereign but also to the private sector. Private inflows are £3.7 million above normal three years before a default, and then drop markedly in the two subsequent years, although these coefficients are not statistically significant. Finally, the Figure suggests that the drop in capital inflows persists for at least three years, although the coefficients of the post-default coefficients are again non-significant. Panel B represents the capital inflows to the private sector of countries *not* in default when one or more of their neighbours fall in default, as a first approximation to pure contagion effects.[3] There is some evidence of contagion, as inflows are £1 million below normal during neighbouring defaults, though the effect is only significant at 10%. There is no evidence that similar credit booms extended to non-defaulting nations before defaults of their neighbours. Finally, there seems to be evidence of reconstitution of

[2] For other similar classifications in the period we are covering see Mauro, Sussman and Yafeh (2006) and Clemens and Williamson (2004).
[3] We used a conservative definition of neighbouring countries, based on political borders.

portfolios after defaults favouring their 'stalwart' neighbours that had not defaulted, in the terminology of Tomz (2007), though the effect is again not significant at 5%.

Figure 1 about here

Naturally, this is just suggestive evidence, as we have not yet controlled for other factors, which were likely to have reduced inflows around defaults. We now turn to the empirical analysis of the relationship under scrutiny, starting by estimating the following reduced-form equation, using regressions with fixed effects:

$$priv_{it} = \alpha_i + \alpha_t + \beta_0 d_{it} + \gamma_1 e^{-\theta(t-t_0)} + X_{it}'\eta + \varepsilon_{it} \quad (1)$$

where $priv_{it}$ is a measure of credit to the corporate sector of country *i* on year *t*, captured by the flows of portfolio investment into private securities, originated in one of the three largest capital exporters, Great Britain, France or Germany (or the aggregation of the three, which will be referred to as "total flows"); α_i is a set of country fixed effects absorbing the effect of permanent differences across nations; α_t is a set of year fixed effects absorbing the effect of common trend; d_{it} is a time dummy that takes the value 1 while a country is in a state of sovereign default. The next variable t-t_0 represents the elapsed time since default in year t_0, which enters as an exponential decay with parameter θ.[4] Although the duration of default was likely to depend on the current economic and political condition of the county (captured by the vector of control variables X'_{it}), this variable quantifies the extra effect of longer defaults on the access to foreign private finance. In other words, it is a measure of memory, which we expect to have a dampening effect of any penalty imposed by foreign markets on the corporate sector of a defaulting nation – particularly in the cases of long defaults included in our sample, such as Colombia (1880-1896) and Peru (1876-1889). Finally, ε_{it} is a set of robust errors satisfying standard assumptions. The control variables in X'_{it} may affect the inflow of capital either through a contraction of supply (scarring of foreign investors), or by depressing demand of finance by domestic firms while the economy (or the political situation) does not recover enough to warrant investment. Our intent in this paper is mainly to identify the first of these effects, but the reduced-form approach of these regressions does not allow a clean identification, as we will discuss in sections 3.2 and 4.3.

[4] The decay parameter θ is estimated in the literature through a preliminary grid search. Related studies on sovereign spreads have documented a value of 0.1, implying a fairly long memory effect and we have adopted the same value here (Eichengreen and Portes 2000, Flandreau and Zumer 2004).

While equation (1) is closer to the results of Flores (2011), we also estimate a more descriptive regression, as follows:

$$priv_{it} = \alpha_i + \alpha_t + \beta_0 d^s{}_{it} + \beta_1 n_{it} + \beta_2 r_{it} + \gamma_1 e^{-\theta\left(t - d^s{}_i\right)} + \gamma_2 e^{-\theta(t - r_{it})} + X_{it}'\eta + \varepsilon_{it} \qquad (2)$$

This specification allows separating the announcement, continuation and resolution impacts of a sovereign default on a country's access to external private finance. Hence, $d^s{}_{it}$ is now a dummy variable that takes the value 1 in the year the default started, n_{it} is an indicator of each year during which the country is in default and r_{it} is an indicator of a restructuring agreement year (corresponding to the last year in default). For the reasons mentioned before, we control for the duration of long defaults and also introduce a second memory variable to capture the residual rationing effect after the restructuring agreement. The coefficient γ_2 therefore captures a pure reputational penalty from defaults. All the remaining variables are as before.

In measuring the dependent variable $priv_{it}$ we look both at the aggregated foreign investment from the three main European capital exporters as well as to two possible decompositions. In the first decomposition, we compare the capital flows from the three source countries to test for possible different reactions to defaults, after controlling for all other economic and political variables that might differentiate across default episodes. Turning to the recipient nations we then decompose the foreign capital inflows into the tradable and non-tradable sectors. This is to take account of the results in the literature according to which domestic firms can partly evade the strictures of a capital embargo through the earning of foreign exchange in the export market or via internal financing, in case they are owned by foreign companies (Blalock et al. 2008, Kalemli-Ozcan et al. 2010). Since we do not have detailed information on the trade account of the nations included in our sample, we use a blunt division between these two sectors, in accordance with the stylized facts about international trade before World War I. Emerging nations in this period mostly exported primary commodities against the import of manufactured goods and services (O'Rourke and Williamson 1999, Williamson 2006). Consequently, we identified as tradables the agricultural and raw materials sectors for emerging nations, whilst we expanded this definition to also include the financial and the industrial and miscellaneous sectors for the advanced economies (as classified in Table 1). The non-tradable sector is composed by the transportation sector (namely railways), public utilities, and the financial sector in emerging economies. The dependent variables were converted into real terms by deflating capital flows by national prices levels.

The control variables describe different dimensions of the economy, similarly to Arteta and Hale (2008) – from which this paragraph is heavily drawn. To allay endogeneity concerns, all variables are lagged by one year (with the exception of global supply of capital measures).[5] As many of the variables we would like to control for are highly correlated, we summarise them in indices using factor analysis from six identified blocks of variables.

We start by grouping the variables into six self-explanatory blocks, as described below, and summarized in Table 2. We then use static Principal Component Analysis (hereafter PCA) to obtain the common factor(s) of each block of variables. The sources for each component variable are described in the Data Appendix and the resulting indices (principal components) are described in Table 2.

- *International competitiveness*: its level affects firms' profitability and consequently their demand for credit. It also translates into the country's ability to attract enough foreign money to service its foreign debt and therefore affects foreign investors' interest in the country. We use the following variables to construct the index: an exogenous measure of the terms-of-trade, trade account, total exports, total imports, and tariff levels. Only the first principal component was retained.[6]
- *Investment climate and monetary stability*: these characteristics affect the demand for investment and the country's level of attractiveness to foreign investors. The following variables were considered: debt service over government revenue (as a proxy for fiscal sustainability), total exports per capita and the inflation rate. Only the first principal component was used. [7]
- *Financial development*: its level affects firms' domestic funding opportunities, hence their demand for foreign capital and their ability to service foreign debt, consistent with Sandleris's (2010) model of *domestic* credit rationing. In the absence of comprehensive data coverage for the usual measures of financial development, we only retained a dummy variable for gold standard membership.[8] The logic here being that only countries with sufficiently developed financial systems were able to remain in the gold standard (Bordo and Flandreau 2003).
- *Long-run macroeconomic prospects*: which influence investment demand through the investor's assessment of a given country's growth prospects. We included: arable land, the effective distance from London, 5-year lag of net migration index, population growth, schooling level of population, and the urbanization rate. Two principal components were retained.[9]
- *Political stability*: unstable political environments may lead to a reduction in firms' investment and thus their demand for capital, as well as to foreign investors' concerns about their ability to

[5] For a more specific treatment of endogeneity see the next sub-section.

[6] A likelihood ratio (LR) test was used to examine the "sphericity" case, allowing for sampling variability in the correlations. This test comfortably rejects sphericity at the 1% level. The first factor explains 57% of the variance in the standardized data.

[7] Also in this case, the LR test comfortably rejects sphericity at the 1% level. The first factor explains 37% of the variance in the standardized data. We used the ratio debt service to exports ("trade test") instead of debt service to revenues ("tax test") because, as shown in Flandreau and Zumer (2004), the latter appears to have become an indicator of financial sustainability only after the Baring crisis of 1890, whilst we also cover the previous decade.

[8] Restricting the sample to countries for which we have information on the size of the banking sector (measured by deposits) does not change the results appreciably.

[9] This LR test still comfortably rejects sphericity at the 1% level. The first (second) factor explains 39% (24%) of the variance in the standardized data.

recap assets in the future. Several alternative definitions of conflict from the Correlates of War project were used, namely dummy indicators for extrastate war, interstate war, interstate dispute and internal war. Only the first principal component was used. [10]

- *Global supply of capital*: reflects the general availability of capital, changes in investors' risk perception and their willingness to provide credit to emerging economies. This index uses: the market rate for 3 months bills in London (a proxy for world short term interest rates) and the yields on British consols, as benchmark for long-term world interest rates. Both were retained in the regressions.

In addition to these indices, we explicitly include the real exchange rate, as it may affect the amount of borrowing measured in foreign currency. To account for the effects of extra financial volatility we also included markers for years with banking crises and sudden stops. All variables are transformed in logarithms except those which are shares, rates, or dummies.

Table 2 around here

Given that the PCA is based on the classical covariance matrix, which is sensitive to outliers, we take one further step by basing it on a robust estimation of the covariance (correlation) matrix. A well suited method is the Minimum Covariance Determinant (MCD) that considers all subsets containing h% of the observations and estimates the variance of the mean on the data of the subset associated with the smallest covariance matrix determinant - we implement Rousseeuw and Van Driessen's (1999) algorithm. After re-computing the same indices with the MCD version we obtain, generally speaking, similar results, meaning that outliers are not driving our factor analysis.[11]

Furthermore, the sampling technique is unfortunately restricted by the fact that cross country coverage is limited and varies widely across different data sources. This limitation creates an incomplete data issue and poses a problem for the PCA that we wish to employ.[12] Hence, imputation may be required prior to extracting the first principal component.[13] The Expectation-Maximization Algorithm (EMA), as suggested by Dempster et al. (1977), is used to fill in missing data. This algorithm is based on iterating the process of regression imputation and maximum likelihood and it consists of two steps: the first step, the "E (expectation)-step" computes expected values (conditional

[10] The LR test comfortably rejects sphericity at the 1% level. The first factor explains 98% of the variance in the standardized data.

[11] The correlation coefficient between ic1 and the MCD-equivalent (hereafer MDCeq) equals 99%, statistically significant at 1% level; the correlation coefficient between icms1 and the MCDeq equals 83%, statistically significant at 1% level; finally, the correlation coefficient(s) between lmp1 (lmp2) and the MCDeq equals 36% (89%), statistically significant at 1% level.

[12] The lack of data also increases the degree of uncertainty and influences the ability to draw accurate conclusions. Indeed, PCA is based on an initial reduction of the data to the sample mean vector and sample covariance matrix of the variables, and this cannot be estimated from datasets with a large proportion of missing values (Little and Rubin 1987).

[13] The varimax rotation method, which is an orthogonal rotation of the factor axes to maximize the variance of the squared loadings of a factor on all variables in a factor matrix, is chosen.

on the observed data) and the current estimates of the parameters. Using the estimated "complete data", in the second step or "M-step", the EMA re-estimates the means, variances and covariances using a formula that compensates for the lack of residual variation in the imputed values.[14]

As recorded in Table 2, we retained just one principal component in three out of four blocks of variables. Table 3 lists the factor loadings. Figure 2 also plots the individual factor loadings against the two principal components retained for the block of variables expressing long run macro fundamentals.

Figure 2 and Table 3 about here

We can interpret the principal components by focussing on the factor loadings onto them and the uniqueness of each variable. Given the high uniqueness of terms-of-trade and tariff levels, the international competitiveness factor (ic1) essentially describes the actual openness to trade (exports and imports) of each economy. Hence, we expect a positive sign of this factor in the regressions. Although none of the investment climate variables is well explained by the factor analysis, inflation enters with a negative sign, whilst the burden of debt service enters positively. Hence, if icms1 stood for the general 'investment climate' or for foreigners' appetite to invest in the country, we would expect icms1 to have a positive coefficient. On the other hand, as foreigners had the choice of investing in sovereign bonds or in private securities, icms1 could also enter negatively. In fact, it is driven by two risks associated with sovereign, but not necessarily private securities: the risk of default and the risk of inflation. As we will see, the empirical results seem to support the second interpretation.

All the war variables have high uniqueness, but despite that colonial (extra-state) wars and international disputes seem better explained by ps1, hence we expect it to enter negatively in the regressions. Finally, long-turn macro fundamentals are represented by two factors. Uniqueness is low for all variables, except the availability of arable land, which implies that the two factors retained span the original variables adequately. As is evident from Figure 2, the second factor mostly reflects urbanisation and the schooling level of the population, whilst the first factor (lmp1) appears to describe the endowment structure of the comparative advantage of most emerging nations in the period (population growth and immigration, natural resources), as well as the trade costs as measured by the economic distance from Europe. In principle both factors should enter with positive coefficients in the regressions, although it is possible that the second factor, which is orthogonal by construction to the first, captures the growth of the non-traded sector. In this sense, a negative sign of the coefficient of lmp2 would be consistent with an interpretation where excessive growth of the non-traded sector

[14] The EMA assumes that the data are missing at random (MAR) and in order to check that the MAR assumption can be applied to the measures of institutional quality, a test analysis called "separate variance t-test", in which rows are all variables which have 1% missing or more, and columns are all variables, is carried out. The p-values are more than 5% meaning that missing cases in the row variable are not significantly correlated with the column variable, and this can be considered as MAR.

would lead to a real exchange rate appreciation, and possibly to current account difficulties that scared foreign capital away.

3.2 Treatment of Endogeneity

The models described in the previous sub-section are all reduced-form and their results may be affected by endogeneity of some or possibly even all the covariates. The standard theories of sovereign debt predict that countries will default when faced with a bad shock to their ability to pay, although not excluding the possibility of purely strategic defaults driven by shocks to the willingness to pay of the sovereigns. Wright and Tomz (2007) found a negative but surprisingly weak correlation between domestic output and defaults over the period 1820-2004. This result is a compound of instances in which countries defaulted strategically when their domestic conditions were favourable (as Ecuador in 2008) and other cases where they continued payments in the face of adverse shocks, as exemplified recently by Latvia. Although suggestive, this result is not a strong indictment against the standard theory, for a number of reasons. First of all because it ignores the role of international conditions, namely the global availability of capital and risk appetite. Second, because it only concentrates on domestic GDP as a sufficient statistic for a complex of economic and political variables that might have influenced the decision to default. The majority of capital-importing nations in our period borrowed abroad in foreign currencies, so that the access to foreign exchange through trade was arguably of greater relevance to domestic finance than the state of the business cycle, particularly since it was often the case that customs duties represented the lion share of ordinary state revenues. Furthermore, the historical GDP series used by the authors were reconstructed by Maddison (2006) to characterize long-term growth and are likely to be measured with significant error for the shorter frequency needed to correlate them with sovereign defaults. Also, contemporary investors and governments had no access to these statistics, which raises questions about their use to predict historical defaults (Flandreau and Zumer 2004).

Be as it may, we will take into the consideration the possibility that lagged economic and political fundamentals might have determined both defaults and stops of external finance to the private sector.[15] Preliminary investigation revealed that the dependent variable was serially correlated such that we will use a dynamic panel approach that provides consistent estimates by using a General Method of Moments. We still have to decide whether to use as in Arellano and Bond (1991) "difference-GMM" (DIF-GMM) or Arellano and Bover (1995) "system-GMM" (SYS-GMM). These two approaches are not completely separate, since the SYS-GMM approach is actually an augmented DIF-GMM estimator (Roodman 2009, Baltagi 2008) that uses potentially more information and internally available instruments in the estimation procedure. We have selected the "difference-GMM" approach in our case for the following reasons. First, the fact that SYS-GMM generates more internally available

[15] Bordo and Oosterlinck (2005) find some evidence that not only did political disturbances increase the likelihood of defaults but that governments were also punished politically after a default.

instruments is only one side of the coin, since it can also generate "too many instruments" (in a sense that many such instruments are "weak") and so one needs to identify the "optimal" number of instruments in order to obtain efficient estimates (Roodman 2009). Second, the SYS-GMM also has one pragmatic disadvantage as this estimation technique is very complicated and one can easily get misleading results if we do not apply the modelling procedure properly (Roodman 2009). Third, the SYS-GMM requires a "the steady state" assumption throughout the analyzed period and if it is not the case (i.e. if the lagged dependent variable does not converge towards the steady state levels), an important assumption of the SYS-GMM is violated (Roodman 2009). Finally, SYS-GMM needs "more" observations to get "better" estimates, which is a limitation that especially applies to our case (we deal below with a sample between 300-700, which is not large by the SYS-GMM requirements).

There is also scope for reverse causation, as external shocks to the country-specific availability of finance (not captured by the measures of world interest rates) might have forced a default through deterioration of economic activity in small open economies. This possibility raises the question of how the observed decrease in private flows of foreign capital during and after a default was divided between shocks to supply and shocks to demand. To try and quantify this directly, we estimate by 3SLS and ML the following system with a demand and a supply equation:

$$s_{it} = \alpha_i^s + \alpha_t^s + \beta_0^s d^s{}_{it} + \beta_1^s n_{it} + \beta_2^s r_{it} + \gamma_1^s e^{-\theta\left(t-d^s{}_i\right)} + \gamma_2^s e^{-\theta\left(t-r_{it}\right)} + X^d_{it}{}'\eta^s + X^s_{it}{}'\varphi^s + \varepsilon^s_{it} \quad (3)$$

$$priv_{it} = \alpha_i^d + \alpha_t^d + \lambda s_{it} + \beta_0^d d^s{}_{it} + \beta_1^d n_{it} + \beta_2^d r_{it} + \gamma_1^d e^{-\theta\left(t-d^s{}_i\right)} + \gamma_2^d e^{-\theta\left(t-r_{it}\right)} + X^d_{it}{}'\eta^d + \varepsilon^d_{it} \quad (4)$$

The first equation is the supply function that determines the country-specific cost of credit s_{it}, defined by the spread of the country's sovereign bonds against the British long-term benchmark (consols), from the same covariates of equation (2). As we do not include $priv_{it}$ in the supply function, this formulation therefore implies a perfectly elastic supply schedule, which although a strong assumption can perhaps be justified by the increasing competition in international capital markets as documented in Mauro, Sussman and Yafeh (2006). This cost of credit enters as an additional explanatory variable in the demand equation (4). The identification rests on the exclusion of the block of covariates $X^s_{it}{}'$ from the demand equation. To operationalise this system we include in $X^s_{it}{}'$ the two proxies for the global supply of capital.

Ideally, we would measure r_{it} with country-specific series of private cost of capital, as Hale and Arteta (2007) did for their study of the impact of currency crises between 1981 and 2004. Although aggregate indices of returns on private foreign investments do exist in this period for all the capital exporters, we are not aware of similar series disaggregated by recipient countries.[16] We were therefore forced to proxy r_{it} with the yields on the sovereign bonds of the corresponding country. This rests on a somewhat loose application of the 'sovereign ceiling' rule. Although usually verified, this principle ignores possible variations in the size of spreads between corporates and sovereigns. Moreover, as we recently saw occurring among some distressed Eurozone nations (Greece and Portugal), the relation can reverse as some private companies in those countries now enjoy better credit than their respective governments. As this is more likely to happen around a default, by using sovereign yields we are probably overstating the impact of supply shocks through the estimate of λ.

We now move to describe the empirical results in the next section. However, before reporting the estimation results of the main models, we set out some preliminary groundwork. We start by revising some model selection tests, to confirm the robustness of the results to the inclusion of particular combinations of explanatory variables. We then follow with a panel VAR (PVAR) exercise where we try to gain intuition about the nature of the interaction between the variables in our models. This is mostly a suggestive application, even though it confirms our choice of variables, as well, as their role in the models estimated later.

4. Empirical Results

4.1 Preliminary Findings

4.1.1 Model Selection

It is well known that the inclusion of particular control variables in a regression can wipe out (or change the signs of) any given bivariate relationship.[17] With these considerations in mind, prior to our fixed-effects estimation, we follow Leamer's (1983) extreme bounds analysis (hereafter EBA) and Levine and Renelt's (1992) empirical application of this model selection test. Adapted to our context, this implies the estimation of regressions of the form

$$Y = a_j + b_{yj} y + b_{zj} z + b_{xj} x_j + \varepsilon \, , \qquad (5)$$

where y is a vector of fixed variables that always appear in the regressions (real exchange rate and banking crises), z denotes the variable of interest (sovereign default), and x_j is a vector of three variables taken from the pool of X control variables. The regression model has to be estimated for the M possible combinations of $x_j \in X$. If the lower extreme bound is negative and the upper extreme bound is positive, the variable is considered not to be robust (Sala-i-Martin, 1997). Vector X is composed of all the variables presented in Table 2. This means we have 21 switch variables implying

[16] For Britain there are the Edelstein (1982) and Chabot and Kurz (2011) indices, whereas for France Esteves (2011a) and Le Bris (2009) provide similar indices. Finally, on the returns of German private investments abroad see Müller (1988) and Schaefer (1993).

[17] See Easterly and Rebelo (1993).

${}^{21}C_3 = 1330$ possible combinations of $x_j \in X$. Table 4 presents our EBA results using the aggregated total capital flow, as well as disaggregated per country of origin for sovereign defaults (we just report the lower and upper bounds).[18]

Table 4 and Figure 3 around here

We confirm the negative impact (statistically significant at usual levels) of sovereign defaults on the total level of real capital flows. Notice that this result is not robust for British capital flows, what accord with Flores's (2011) results. An important question is whether the size of, e.g., the sovereign default coefficient is influenced by the inclusion of specific conditioning variables. In order to test for this, we have computed the conditional mean effect size of sovereign default, i.e., the mean effect size conditional on the inclusion of a specific variable of the set of 21 switch variables that were previously selected. Figure 3 graphically illustrates the results of our analysis for the (conditional) mean effect sizes.

The vertical bars in the figure represent the 90% confidence bands around the average (conditional) estimated default coefficient (indicated by the bold squares). The 21 conditioning variables indicated on the horizontal axis are organized as they were included in the EBA exercise. The conditional mean effect size ranges from -2.1 in the case of Terms of Trade to -1.6 in the case of total exports. However, Figure 3 also shows that most confidence intervals overlap, suggesting no statistically significant effect of the choice of conditioning variables on the size of the relationship between default and total level of real capital flows.

Alternatively, we employ the Bayesian Model Averaging (hereafter BMA) approach as an alternative robustness model selection method. Essentially, BMA treats parameters and models as random variables and attempts to summarise the uncertainty about the model in terms of a probability distribution over the space of possible models. The method is used to average out the posterior distribution for the parameters under all possible models, where the weights are the posterior model probabilities. To evaluate the posterior model probability BMA uses the Bayesian Information Criteria (BIC) to approximate the Bayes factors that are needed to compute the posterior model probability, as discussed in more detail in Raftery (1995), Sala-i-Martin et al. (2004) and Malik and Temple (2009). The output of the BMA analysis includes the posterior inclusion probabilities for variables and a sign certainty index.[19] The higher the posterior probability for a particular variable the more robust that determinant for external capital flows appears to be.

Table 5 presents our results for the total level of real capital flows. It is organized with the sovereign default variable followed by 6 main building blocks accounting for each of the categories

[18] The number of observations for the sample of German capital flows is too small for this technique to work.
[19] For posterior inclusion probabilities greater than 0.50, a sign certainty index is presented, clearly suggesting the relationship being either positive or negative.

identified in Table 2. Each block is considered independently in each BMA computation and finally all are included simultaneously in the last column.

Tables 5 and 6 around here

There is now mixed evidence on the inclusion of some of the original variables in the final model, even though the previous EBA results suggest that their exclusion should not affect the size of the coefficient of interest. This is another reason why we decided to use as covariates the principal components of the six blocks of variables, as opposed to the original variables. In Table 6, we summarise the evidence by listing the models with higher R-squares for the dependent variable, both in aggregate form and disaggregated by origin of flows. There is some variation reflected across exporting nations in the covariates, which we will explore later. Nevertheless, the instances of default are consistently included and significant across specifications.

4.1.2 Panel VAR Approach

We now use a Panel Vector Autoregression (PVAR) approach aimed at analysing the short-run transition of private capital flows to shocks to "fundamental" variables and to sovereign defaults.[20] It combines the traditional VAR approach, which treats all the variables in the system as endogenous, with the panel-data approach, which allows for unobserved individual heterogeneity. We specify a first-order VAR model as follows:

$$Y_{i,t} = \Gamma_0 + \Gamma(L)Y_{i,t} + \nu_i + \varepsilon_{i,t}, \qquad (6)$$

where $Y_{i,t}$ is a vector of endogenous variables, Γ_0 is a vector of constants, $\Gamma(L)$ is a matrix polynomial in the lag operator, ν_i is a matrix of country-specific fixed effects, and $\varepsilon_{i,t}$ is a vector or error terms (with zero mean and country-specific variance).

The main advantage of using a PVAR approach is that it increases the efficiency of the statistical inference, which would otherwise be suffering from a small number of degrees of freedom when the VAR is estimated at the country level. While this comes at the cost of disregarding cross-country differences by imposing the same underlying structure for each cross-section unit, Gavin and Theodorou (2005) emphasize that the panel approach allows one to uncover common dynamic relationships. Moreover, by introducing fixed effects, ν_i, one can allow for "individual heterogeneity" and overcome that problem. However, the correlation between the fixed effects and the regressors due to lags of the dependent variables implies that the commonly used mean-differencing procedure creates biased coefficients (Holtz-Eaking et al. 1988), which will be particularly severe if the time dimension is small (Nickell 1981). This drawback can be avoided by a two-step procedure. First, we

[20] We thank Inessa Love (World Bank) for providing her original code which we adapted to our own purposes.

use the "Helmert procedure", that is, a forward mean-differencing approach that removes only the mean of all future observations available for each country-year (Arellano and Bover 1995). Second, we estimate the system by GMM and use the lags of the regressors as instruments, as the transformation keeps the orthogonality between lagged regressors and transformed variables unchanged (Arellano and Bond 1991). In our model, the number of regressors is equal to the number of instruments. Consequently, the model is "just identified" and the system GMM is equivalent to estimating each equation by two-stage least squares.

Another issue that deserves attention refers to the impulse-response functions. Given that the variance-covariance matrix of the error terms may not be diagonal, we need to decompose the residuals so that they become orthogonal. We follow the usual Choleski decomposition of variance-covariance matrix of residuals, in that after adopting a particular ordering of variables, any potential correlation between the residuals of the two elements is allocated to the variable that comes first.

In this vein, we experiment with two different panels, organised along two sets of variables –the first representative of domestic conditions and the second composed of external, exogenous shocks to a small open economy.

The ordering of variables for the first system is **lmp1**, **ic1, icms1, ps1**, **sovdef** and **priv**. Long-term macro fundamentals are the most exogenous factor in this system, as they only change at a lower frequency than the other variables. Since the international competitiveness factor is essentially driven by the degree of openness of the economy, we order it in the next position. Even if governments reacted to a deterioration of domestic economic conditions through tariff reforms, these would take time to get approved and implemented, so should not react simultaneously to the two previous variables. Next in line, the investment climate and monetary stability principal component is ordered before political disturbances, sovereign defaults and foreign capital flows to private enterprise. The ordering here is less clear than in the previous cases as wars, defaults and sudden stops would certainly reflect fairly quickly onto the domestic investment climate. If we consider the variables that compose icms1, exports per capita and the inflation rate were likely to react to a default with some lag, for the usual nominal rigidity reasons. Although the measured debt service would only logically come down *after* a default had been declared, as we only have annual data it is possible that the two variables react simultaneously to each other within the same year. [21] Despite Bordo and Oosterlinck's (2005) finding that defaulting governments faced political penalties, the logical ordering is also from political troubles to default. Finally, we order the foreign capital flows to private applications last, in agreement with our hypothesis that sovereign defaults had a reputational spillover to the corporate sector.

For the second system we use the following ordering: **igblong**, **gold**, **excr**, **sovdef** and **priv**. Long term British interest rates are considered the most exogenous variable in this system, followed by the membership in the gold club. The ability to continuing pegging to gold was certainly not immune to

[21] Changing the ordering of the variables, however, does not have a significant impact on the results.

problems arising in the economy (excr), the government (sovdef) or to external shocks to external finance (priv), but except in the case of pure currency crises, the order of the events would be from the latter variables to an abandonment of the peg. In any case, in our sample defaults are not good predictors of currency crises. Out of the 9 defaults included, only two are contemporary of currency crises (the Argentinean default of 1890 and the Brazilian of 1898).. Finally, sovdef and priv are ordered after excr–which here stands for an economic shock–for similar reasons to those mentioned in the previous system.

The results of the two systems are presented in Figures 4-5 and in Tables 7-8.

Figures 4-5 and Tables 7-8 about here

Starting with the Tables, that present the variance decomposition of the variables included in the two systems, it is clear that the variance of each variable is essentially explained by itself, which bodes well for the inclusion of these variables as covariates in the main regressions. The only exception is the investment climate and monetary stability factor icms1, since a significant share of the variance of this factor is explained by the international competitiveness factor. This is a suggestive result as it seems to conform to a pattern of dependence of domestic finances and monetary stability on the ebbs and flows of international trade. It is well known that in many emerging and developing economies of the period a substantial share of tax revenue was raised out of customs, what would make this connection direct. Moreover, these small open economies, exporting commodities priced in foreign currencies, would face a full pass-through of any exogenous terms of trade shocks onto their domestic price levels.

The impulse-response functions of Figures 4 (first system) and 5 (second) are also broadly in line with what would be expected of capital-importing nations before 1914. Starting with the first system, long-term macro fundamentals are unaffected by any shock to the remaining variables, except political stability, which broadly confirms our ordering. Although political shocks have a large and persistent negative impact on macro fundamentals, this effect is only marginally significant at 5%.

International competitiveness is also irresponsive to the variables ordered after it, with the exception of private capital inflows. A positive shock to these has a negative impact on competitiveness, probably a 'Dutch disease' phenomenon operating through real exchange rate appreciation. The effect is persistent and cumulative, which seems to agree with recent research that dispels the conventional view about wage and price flexibility during the classical gold standard (Catão and Solomou 2005). Equally persistent but positive is the impact of a shock to macro fundamentals on competitiveness, which is not surprising because, as mentioned before, lmp1 describes the endowment structure of the comparative advantage of most emerging nations in the period.

Monetary stability/ investment climate do not react to shocks to ps1 or, interestingly, to sovereign defaults. It reacts in a negative and persistent way to a shock to private capital inflows, which is probably driven by the fact that the measures of fiscal sustainability encapsulated in icms1 are directly or indirectly dependent on the export level. Better macro fundamentals and, especially, competitiveness also help with monetary stability persistently. The latter effect is especially strong, in agreement with the evidence from the variance decomposition matrix. Strong but strange is the positive impact of a shock to priv on to political instability. Perhaps this is just capturing political instability after sudden stops and the financial crises associated with them (Bordo, Cavallo and Meissner 2010).

The likelihood of defaults decreases significantly with positive shocks to macro fundamentals and monetary stability/ financial sustainability, although the latter effect is only significant after 4 years. Strangely, sovereign defaults are unfazed by positive shocks to international competitiveness or political disturbances. So, in this system at least there is no evidence of the double feedback between defaults and political turmoil suggested by Bordo and Oosterlinck (2005). A onetime shock to private capital inflows does have a prolonged negative effect on the likelihood of a sovereign default, which is to be expected, as foreign exchange is fungible and increased flows from abroad helped sustaining the payment schedule of the sovereign.

In agreement with the hypothesis under test in this paper, private capital inflows are negatively and persistently hurt by sovereign defaults. The effect is only significant after a year, but this may be an artefact of our dataset which does not allow identifying movements at a sub-annual frequency. The only other shock with a significant impact on priv is international competitiveness, but the direction of the effect is unexpected.

Moving on to the second system, the interest rate on British consols is affected by the other variables in the model, bar private capital inflows. To start off, there is a positive and significant impact of the real exchange rate on igblong, but that is almost imposed by construction. Uncovered interest parity requires that depreciation against sterling (a positive shock to excr), with unchanged exchange rate expectations, be compensated by a lower interest rate differential against the UK. The literature has shown that sterling interest rates did the bulk of the international adjustment in this period and the impulse response function just captures that (Bordo and MacDonald 2005). Harder to explain is the positive impact of gold standard membership on the British long rates. Finally, a default shock has a negative impact on the long British rate, which would be consistent with a scenario of flight to quality in the wake of sovereign crises. Real exchange rate appreciations have a negative impact on gold membership, as expected, whilst positive shocks to private capital inflows make pegging to gold easier.

The only significant shock onto the real exchange rate is a sovereign default, leading to a real depreciation. This result is probably driven by domestic inflation as a consequence of insolvent sovereigns seeking alternative sources of financing through monetisation of debt.

In this system, sovereign defaults do not react to shocks to any of the other variables, bar gold membership. This is especially puzzling in the case of shocks to the British long-term rates, which are taken here as a measure of global liquidity and risk appetite. The negative relation with a shock to private capital inflows is still present, but it is no longer significant, as in the previous system. Private capital inflows are permanently affected by shocks to the global interest rate and the real exchange rate, both as expected. Compared to the first system, the impact of sovereign defaults is now smaller.

To conclude this section, the two alternative panel VARs offer many suggestive evidence about the relation between sovereign defaults and the flows of foreign finance to the corporate sector of defaulting nations. But in order to get a cleaner measure of the size of the effect, not to mention the direction of causality, we need to embed the two groups of variables used the PVARs into a regression setting. We now turn to the results of the estimation of equations (1) and (2).

4.2 Main Results

4.2.1 Fixed Effects Panels

In this section we present the results of the estimation of equations (1)-(2) using fixed effects panel methods. We will also distinguish the results for aggregate capital flows from those for the capital exports of each individual nation: Britain, France, and Germany. The differences in results across capital-exporting nations do not necessarily correspond to diversity in the investment strategies of local savers, as international capital markets were relatively well integrated at the time and unencumbered by any significant barriers to capital mobility (Obstfeld and Taylor 2004, Esteves 2011b). European investors could fairly easily diversify their portfolio by channelling their investments through foreign markets and were not limited to the options available in their own domestic markets. Financial markets, however, competed for business and there is circumstantial evidence of geographical specialization with London concentrating in North American and Asian/Pacific securities, whereas Paris and Berlin focused more on European, Latin American and African investments. There is therefore scope for composition effects, which we will explore by separating the dependent variable by country of origin.

Starting with the estimates of equation (1) in Table 9.1, the default dummy is consistently negative and significant. Furthermore, the coefficient of duration is significant, positive and larger than the default dummy when we introduce the control factors in the last two columns.

Tables 9.1-9.4 about here

Since the dependent variable is expressed in logs, the coefficient for defaults has to be rescaled. For instance, the estimate of -1.306 in the sixth model means a drop in private capital inflows of the order of 73% = $e^{-1.306}$-1, during default. In this particular case, because the coefficient of duration is so large, the model actually predicts a drop in private investment only for defaults longer than 5 years. This could be the effect of portfolio recomposition in favour of private securities, of the type that we have seen recently in the context of the Eurozone, as some private firms now enjoy better credit than their sovereigns, reversing the usual 'sovereign ceiling' rule. We don't want to emphasise too much the numerical magnitude of this result, however, as it is not robust across models and samples.

Among the controls, the only consistently significant are our proxy for financial development (gold standard membership) and the first factor of long-term macro fundamentals (lmp1), which as argued previously is related to the comparative advantage of most emerging economies in this period.[22] By contrast, the indicators of international competitiveness (ic1), monetary stability and investment climate (icms1), political instability and world liquidity are not significant. These negative results are perhaps less surprising then at first sight. On the one hand, wars, monetary and fiscal instability and loss of competitiveness were the most common causes of defaults, so that the effect of the former might already be captured in the default dummy. On the other, the irrelevance of British interest rates as proxies for world liquidity and risk appetite is probably just an expression of the environment of exceptionally low returns at the European core, emphasised by Mauro, Sussman and Yafeh (2006), and which partly explained the great waves of capital export from Europe to emerging nations around the World prior to the Great War. The gold standard variable has a positive and very large coefficient, implying an increase in capital inflows of c. 130%, relative to countries outside gold. Despite Catão and Solomou's (2005) evidence of large real exchange rate variations in the classical gold standard period, excr is usually insignificant in our models. Finally, the time dummies identifying currency or banking crises add very little explanatory power, which reinforces our confidence that our model captures adequately the essence of the foreign investors' decision model.

As we will see, the results for the control factors are robust to most specifications and alternative samples. However, that is not the case for our coefficient of interest. Table 9.2 starts by introducing some variation across investing nations. Whereas, the results for French capital exports are consistent with the aggregate data in Table 9.1, note that British investment in private firms abroad did not react to defaults, confirming that Flores's (2011) results were hampered by only using British flow data. Although the coefficient is only borderline significant in the German sample, and has the wrong sign, we believe that this result should be discounted on account of the small sample size.

Much worse are the results disaggregated by tradable and non-tradable sectors (Tables 9.3-9.4). Practically the only significant factors in foreign flows to tradables are the second fundamentals factor (lmp2) and the real exchange rate, which although not unexpected is not very encouraging. Table 9.4 has better results for the non-tradable sector, although the size of the coefficients is improbably large.

22 This result confirms the conclusion of Clemens and Williamson (2004) that long-run macro fundamentals were the main drivers of international capital flows in the period.

Turning to equation (2), the estimates of the model with aggregate flows (Table 10.1) confirm the results from equation (1) as far as the greater relevance of domestic covariates compared to sources of external variation (British interest rates) and the real exchange rate. In the full model (columns 6-7), the additional markers for financial disturbances (currency and banking crises) are again insignificant. Among the domestic covariates, financial development and the first factor of long-term macro fundamentals have a strong and statistically significant positive impact on private capital inflows. In particular, gold standard membership is measured in this model as having increased annual inflows by close to 108 percent.

Tables 10.1-10.4 and Figure 6 about here

After controlling for these variables, the impact of sovereign defaults is quite marked, at the outset, the continuation, and even at the moment of debt rescheduling. Before commenting on these results it is important to remember the interpretation of the coefficients of the first 5 variables. The first three are time dummies, so they should be interpreted as the proportional decrease in the explained variable. For instance, the coefficient for the default year in column (7) -1.133 implies a drop in private capital inflows of the order of 68% (relative to the non-default counterfactual), even though it is not significant at the conventional levels in this model. Throughout the default and up to the year of rescheduling, the drop in capital inflows is of similar magnitude. Moreover, and as in the models of equation (1), longer defaults attracted progressively higher penalties, as the coefficient on the exponential decay for default duration is strongly positive. This time, the estimate of the duration effect is smaller than in Table 9.1, such that there is a negative net impact on private capital inflows after 3 years in default. Beyond that, foreign capital inflows drop by 9% after 4 years in default, 19% after 5 and worse, for longer default cases. For instance, after 10 years in default capital inflows to the private sector are halved (see Figure 6). These are larger contractions than the 20% found by Arteta and Hale (2008) between 1984 and 2004, but the median duration of defaults in their sample is much shorter than in the historical period under study here (5 years). Interestingly, the size of the penalty is similar to that for the contemporary period if we take the median duration of historical defaults. However, because of the contradictory effects of the time dummies and the duration coefficient, the total effect is not statistically significant at 5% during the actual default, very much as in Arteta and Hale (2008).

On the other hand, the memory effect after a default had been rescheduled is negative and significant throughout. Starting at -62% in the first year after settlement, it then drops to - 48% after 5 years and -32% after 10. This is not only a very persistent effect, but also a large one, compared to similar evidence on the persistence of higher spreads on sovereign bonds.[23] Such result underscores our

[23] For instance, Flandreau and Zumer (2004) found a 90 basis points penalty one year after settlement, going down to half of that after ten years.

interest in penalty effects of past defaults on the corporate sector permanent ability to attract foreign finance.

Once more, the decomposition by country of origin of capital did not yield as good results, probably as a consequence of the smaller samples involved (especially in the case of German and French foreign investment). Many of the coefficients in Table 10.2 are no longer significant, though those that are share the same signs of Table 10.1, albeit with smaller sizes. For instance, the memory penalty in the case of British investments (column 4) starts at -59% and falls to -31% after 10 years. French flows are the only ones to correlate with long-term British rates, though with the wrong sign. As in Table 9.2, they are also the only ones clearly impacted by instances of default.

The results for the disaggregation by foreign investment in tradables (Table 10.3) vs. non-tradables (Table 10.4) are very similar to the corresponding disagreggation of the results of equation (1) in Tables 9.3-9.4. The pattern of controls is essentially the same, whilst the impact of defaults is especially marked in the non-tradable sector, supporting the results of contemporary literature on the greater ability of the traded sector in avoiding foreign financial embargoes. Nevertheless, the robustness of these results will be assessed in the next section when we deal explicitly with the problem of endogeneity.

4.3 Robustness

4.3.1 Endogeneity – Arellano-Bond GMM estimation

To take into account possible endogeneity (and resulting bias and inconsistency of previous coefficient estimates) we also estimate the main equations (1) and (2) using Generalised Methods of Moments (GMM). An underlying advantage of the dynamic GMM estimation is that all variables from the regression that are not correlated with the error term (including lagged and differenced variables) can be potentially used as valid instruments (Greene 2008). As justified above, we rely on the first-differenced GMM by Arellano and Bond (1991). The difference GMM treats the model as a system of equations in differences one for each time period (i.e. internal instruments are differenced variables). The results of the estimations of equations (1) and (2) are collected in Tables 11.1-11.4 and 12.1-12.4, respectively.

Tables 11.1-11.4 and 12.1-12.4 about here

Compared to the FE estimates, the coefficients of the default dummies are twice as large in size, though the recomposition effect is slightly stronger such that the net effect of defaults on private capital inflows only turns negative for defaults longer than six years (Table 11.1). The importance of fundamentals (lmp1) is also enhanced, while the marker for gold is no longer significant. The treatment of endogeneity, therefore, seems to be a matter for concern. This is even clearer when we disaggregate the sample by country of origin of capital. Contrary to Table 9.2, British capital is now significantly affected by defaults turning negative also after 6 years in default. As in the previous cases, the results are much less clear when we separate into smaller sub-samples by sector (Tables 11.3-11.4).

The results for equation (2) confirm this, with a very strong and in this specification immediate penalty from default passed on to the private sector, without a portfolio recomposition effect as in the models reviewed up to now. Interestingly, the coefficient on memory effect is not significant in this model, except when estimated for tradables only, though this may just be due to the nature of the specification that incorporates the positive autocorrelation of foreign capital flows specifically. Hence, a memory variable would have a harder time at identifying an extra effect over and above that already included in the lagged dependent variable.[24]

Even though these results underscore our endogeneity concerns, not allayed by the inclusion of lagged values of the controls, they offer no clear idea about the source of the drop in access to foreign finance by domestic corporate: a reduction in supply by foreign investors or a drop in demand by the corporate themselves, in response to the depressed investment opportunities during and, perhaps for some time also, after a default. We now attempt to separate these two effects by reporting the estimates of the system of equations (4)-(5) in the following section.

4.3.2 Structural Estimates

Tables 13.1-13.3 report the 3SLS and ML estimates of the system of equations (4)-(5).[25]

Tables 13.1-13.3 about here

Once more, we compare the aggregate sample with the results for the sub-samples of tradable and non-tradable sectors. Apart from some differences in coefficient sizes, the results are consistent across estimation methods. Table 13.1 underscores that supply shocks dominated demand retraction for foreign finance in the wake of a default. As expected, defaults had a severe impact on the cost of sovereign borrowing (models 3 and 4, supply columns), increasing spreads by close to 500 basis points initially. In longer default cases, spreads rose even further by more than 1000 basis points and remained as high up to the rescheduling agreement. While the default lasted, demand also contracted, although the default dummies are now only marginally significant. The recomposition effect, found in previous models, is also present in the demand equation, although again only marginally significant and for shorter defaults (shorter than 3 years) than in previous estimates. Interestingly, there is

[24] It should also be noted that the structure of our panel is not the most adequate for dynamic panel methods because the time series is larger (34 years) as the cross-section (29 countries). This may affect the quality of the estimates.

[25] We only report the estimates controlling for sudden stops, for parsimony and also because the tenor of the results is not affected by substituting the indicator of banking crises for sudden stops.

evidence of a complementary effect on the supply equation, as the negative coefficient on the duration of defaults implies that the spread penalty decreased with longer defaults. This is hardly surprising, as a downward revision of spreads was to be expected in advance of a restructuring agreement with creditors.

Still consistent with the previous results, there is a lingering effect of the default on corporates' demand for foreign finance *after* the default had been settled, as well as a persistent penalty on spreads, starting at 136 basis points and falling down to 50 after ten years. These estimates are similar to Flandreau and Zumer's (2004) finding of a 90 basis points penalty one year after settlement, halved after ten years. There is therefore evidence of demand *and* supply factors in explaining the observed contraction of borrowing in accordance with the hypothesis of this paper about credit rationing to the private sector, as a consequence of sovereign risk.

All controls have the expected signs in the two equations, and are now mostly significant. By construction, all the factors are re-scaled to mean zero and standard deviation one. Consequently, we can compare the economic significance of each factor from the relative size of their coefficient estimates.[26] By this metric, macro fundamentals dominate in the demand equation, followed by international competitiveness and monetary stability (icms1). Apart from the size, the sign of icms1 is also remarkable. A negative coefficient implies that foreign investors reconstituted their portfolios of emerging securities away from sovereign bonds and toward private securities when worried with the fiscal position of local governments or as a hedge against inflation. Consequently, icms1 is probably less of a descriptor of overall 'investor confidence' in the country and more of a measure of investor's trust in the sovereign's ability to repay its obligations without defaulting on or monetising them. Interestingly, the order of sizes is reversed in the equations for spreads, with monetary stability and competitiveness having larger coefficients in absolute value than fundamentals.

Contrary to the 'thin film of gold' literature, gold standard membership affects the supply equation, though not demand. Notice that only long-term British interest rates have an impact on sovereign spreads (as expected) but with a negative sign. A negative relationship between benchmark yields and spreads has also been found elsewhere and there are some attempts at explaining it. Eichengreen and Moody (2000) interpret this result as an expression of adverse selection. During periods of high benchmark yields, good borrowers withdraw from the market temporarily, while low quality borrowers remain willing to pay more. For the first group of borrowers, the relation would be negative and positive for the second. The negative coefficient we found therefore implies that the bulk of international capital exports in this period was absorbed by 'good borrowers,' consistent with the evidence on the good *ex post* returns of these investments (Edelstein 1982, Eichengreen and Werley 1988, Esteves 2011a, Lindert and Morton 1989, Schaefer 1993). Uribe and Yue (2006) have a model of overshooting where spreads increase on impact with a rise of the benchmark yield, decrease

[26] In other words, the raw coefficients are multiples of the standardised coefficients. If β is the raw estimate of the effect of x on y, the standardised coefficient is given by $\beta \times \sigma_x / \sigma_y = \beta / \sigma_y$ in this case.

afterwards, and remain permanently above the initial level thereafter. Because of the low frequency of our data, the negative coefficient that we found may be capturing this intermediate decrease in spreads after the overshooting. Another notable result is the insignificance of the spread variable in the demand equation, which raises questions about the suitability of sovereign spreads as measures of borrowing costs of the private sector during a default.

However, when we break the sample by sectors we get some interesting insights. The traded sector demand for foreign finance is not affected at all by the default, despite a very substantial increase in spreads both during and after the default (Table 13.2). Consequently, supply rationing is not only the principal, but the single mover in the case of inflows to the tradable sector. Other authors have also found that the traded sector has an easier time at financing itself than the firms in the nontraded sector (Arteta and Hale 2008, Blalock et al. 2008, Kalemli-Ozcan et al. 2010). This is expressed neatly in Table 13.3 in which the coefficients of the default variables in the demand equation in the nontraded sector are actually positive. Even though the coefficients are not significant at conventional levels, this is at least suggestive. Since the bulk of the nontraded goods sector in our samples is constituted by railways and public utilities, which were normally dependent on direct or indirect support from local governments, it is unsurprising that their demand for outside finance should increase at the time when their usual source of credit was not available. This is also consistent with the fact that sovereign spreads seem to be a better measure of the effective cost of capital to this sector. Indeed, the demand curves are now downward sloping, which combined with large and persistent impacts of default on spreads lead to severe credit rationing.

The results of these structural models not only confirm the hypothesis of this paper, but unveil significant differences in the way different sectors in the economy reacted to default-related credit constraints in international capital markets. Further research is needed to identify with greater detail these effects, by using a finer classification of economic sectors.

5. Concluding Remarks

In this paper we documented the consequences of sovereign defaults to the private sector between 1880 and 1913. This was a period of almost unrivalled worldwide financial integration, parallel only to our own wave of financial globalisation since the late 1970s. In both periods, governments were the initial movers in taping into the pool of international finance, followed by the private sector. In many countries this opening of foreign markets to sovereign finance led and continues to lead to sovereign debt crises. Historical experience shows that these crises impart substantial costs in terms of lost output, macro instability, and possibly long-term slower growth (Reinhart and Rogoff 2009). Out of the many hypotheses advanced in the literature to explain this negative growth link, we singled out the credit rationing of domestic investment of private firms dependent on external finance.

We tested this hypothesis in a panel of mostly emerging and developing nations in the late 19th and early 20th centuries, and which imported the vast majority of all capital exported from Europe in the same period. Our results confirm that rationing was prevalent and very important not only during the actual period of default but also after the renegotiation of debt was concluded and sovereigns tried re-financing themselves (many of them successfully) in the international capital market. In all models estimated, capital inflows to the private sector fell quickly after an initial period of portfolio recomposition away from sovereign securities. The reduced form estimates are of a fall in inflows of close to 20% for the median duration of defaults in the sample (5 years), which is in line with the size of the equivalent drop estimated by Arteta and Hale (2008) for emerging economies since the 1980s. As in the period since 1984 these estimates are especially significant (in statistical terms) *after* the defaults have been settled, suggesting that the greater burden of financial reputation was borne over the long-run by the corporate sectors of these economies.

We further verified that the estimated drop in access to foreign finance was not exclusively due to lower demand by private firms, perhaps because of depressed domestic conditions which had led to the default in the first place. On the contrary, after controlling for possible sources of endogeneity, we identified a negative supply shock forcing credit rationing to the domestic corporate sector. This effect was particularly present in the case of borrowing from abroad by the nontraded goods sector in emerging economies, whereas the traded sector was less affected by the same shock. Our results confirm similar evidence found for more recent cases of defaults and underscore an apparently permanent source of financial disadvantage among firms in emerging nations, at least until the domestic financial system is developed enough to provide for the financing needs of itself and the non-financial sector.

A question suggested by the evidence but not dealt with here is the differential impact of the same sovereign shock in different sectors of the economy. In future research we hope to identify these differences by using a finer classification of economic activities and firm-level data.

Data Appendix

Terms of Trade: net barter terms of trade using international prices for exports and imports were taken from Blattman, Hwang and Williamson (2007).
External Trade: values for exports and imports expressed in local currency units were mainly obtained from Mitchell (1998a, 1998b, 1998c) with the following exceptions. Brazil from Motta et al. (1990); Chile from Wagner et al. (2000); Mexico from INEGI (2009) and El Colégio de Mexico (1960); Turkey from Pamuk (1995); Portugal from Valério (2001) and Spain from Carreras and Tafunel (2005).
Tariffs: total value of government revenue from import duties divided by the total value of imports from Clemens and Williamson (2004).
Debt: total government debt levels (excluding paper money) in local currency units were mostly taken from the database of Accominotti et al. (2011) for the period 1880-1913. Similarly, foreign debt levels were taken as the percentages of debt serviced in gold in the same database. For some countries we used the following sources. Chile from Wagner et al. (2000); Colombia from Kalmanovitz (2010); Japan from Japanese Statistical Association (1987); Mexico from data kindly shared by Leonardo Weller; Turkey from Tunçer (2011); Peru from the *Statesman's Yearbook*; Portugal from Mata (1993); Serbia from Gnjatović (2009) and Uruguay from the Uruguayan Statistical Yearbooks.
Debt service and government revenue: total cost of service (as far as possible excluding repayment instalments) of domestic of foreign debt and total government revenue, in local currency units were obtained from Accominotti et al. (2011) for the period 1880-1913. For countries not covered in this database, information was gathered from the following sources. Colombia and Peru from Ferguson and Schularick (2006); Chile from Wagner et al. (2000) and the *Sinópsis Estadística* (1918); Colombia from Mitchell (1998c) and Kalmanovitz (2010); Japan from Japanese Statistical Association (1987); Mexico from El Colégio de Mexico (1960), Wilkie (1967) and Mitchell (1998c); Turkey from Pamuk (1987) and Güran (2003); Peru from Mitchell (1998c) and Tantaléan Arbulú (1983); Philippines from Mitchell (1998a); Serbia from Mitchell (1998b) and Gnjatović (2009); Siam from Mitchell (1998a) and Uruguay from Millot and Bertino (1996, 2005) and the Uruguayan Statistical Yearbooks.
Price levels: GDP deflators for all countries where they were available, or CPI in alternative (rebased to 1913=100). Apart from Mitchell (1998a, 1998b, 1998c) and Accominotti et al. (2011) we used the following sources. Colombia, Mexico and Uruguay from Williamson (1999); India, Japan and Siam from Williamson (2000a); Egypt and Serbia from Williamson (2000b); Chile from Díaz et al. (2010); Greece from Kostelenos et al. (2007); Turkey from Pamuk (2001); Peru from Quiroz (1993) and Portugal from Valério (2001).
Gold standard membership was established from Accominotti et al. (2011) and Meissner (2005).
Long-run economic fundamentals were obtained from Clemens and Williamson (2004) and Esteves (2007a). These include: **total area** and **arable land** (in sq miles), **effective distance** from Europe, **net**

migration (index from -3 emigration to +3 immigration), **population** and **schooling level** (percentage of population under 14 enrolled in primary education), **urbanisation rate** (percentage of population living in cities with 100,000 and more inhabitants) and the **share of primary products in exports**.

Global cost of capital was proxied by one long-term and two short-term interest rates in the UK. The **yields on British consols** were obtained from Accominotti et al. (2011) as well as Homer and Sylla (2005). The Bank of England's **bank rate** annual averages were calculated from data reported in Mitchell (1962), as well as the **3 months banks' bills** traded in London.

Global **capital flows** were reconstituted from databases of British capital exports from Stone (1999), French capital flows from Esteves (2011a) and German capital flows from Esteves (2007a).

Measures of **political turmoil** interstate extrastate and domestic were coded by the Correlates of War project at http://www.correlatesofwar.org.

The majority of the **exchange rate** (local currency units per pound sterling) data comes from the compilation by Schneider et al. (1911) or Accominotti et al. (2011) with the following exceptions. Argentina from Cortes Conde (1989); Australia and Canada from the Global Financial Database at www.globalfinancialdata.com; Brazil from Motta et al. (1990); Colombia from Ocampo (1984) and the OxLAD database at http://oxlad.qeh.ox.ac.uk/; Egypt (partially) and Siam from the Global Financial Database; Japan from Japanese Statistical Association (1987); Mexico from INEGI (2009); Norway from Eitrheim et al. (2004); Portugal from Esteves (2002); Serbia from data kindly shared by Dr Milan Sojic; Sweden from the project 'Historical Monetary Statistics of Sweden 1668-2008,' available at http://www.riksbank.se/templates/Page.aspx?id=27394 and the US from Sutch and Carter (2006).

Sovereign spreads over the British consol yields (in basis points) use mostly four sources: Accominotti et al. (2011), Ferguson and Schularick (2006), Esteves (2007b) and Clemens and Williamson (2004).

We followed the dating of **banking crises** of Reinhart and Rogoff (2009) and for **currency crises** we used the same source and Bordo and Meissner (2007). **Sovereign defaults** were coded from Esteves (2007b) and Suter (1990).

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Table 1: Countries and Territories Included in Sample

Name	Colony	Autonomous	Sovereign	Classification	Defaults
Argentina			1880-1913	Emerging	1890-93
Austria-Hungary			1880-1913	Developed	
Brazil			1880-1913	Emerging	1898
Chile			1880-1913	Emerging	1880-83
Colombia			1880-1913	Emerging	1880-96, 1900-04
Denmark			1880-1913	Developed	
France			1880-1913	Developed	
Germany			1880-1913	Developed	
Greece			1880-1913	Emerging	1894-97
Italy			1880-1913	Emerging	
Japan			1880-1913	Emerging	
Mexico			1880-1913	Emerging	1866-85
Norway			1880-1913	Emerging	
Ottoman Empire			1880-1913	Emerging	1876-81
Peru			1880-1913	Emerging	1876-89
Portugal			1880-1913	Emerging	1892-1901
Russia			1880-1913	Emerging	
Serbia			1880-1913	Emerging	1895
Siam			1880-1913	Emerging	
Spain			1880-1913	Emerging	
Sweden			1880-1913	Emerging	
United States			1880-1913	Emerging	
Uruguay			1880-1913	Emerging	1891
Australia	1880-1900	1901-1913		Emerging	
Canada		1880-1913		Emerging	
Egypt		1882-1913	1880-1881	Emerging	
New Zealand	1880-1906	1907-1913		Emerging	
Ceylon	1880-1913			Emerging	
India	1880-1913			Emerging	

Table 2: Summary of Indices

Concept	Indices	Average	St dev.	Variables	Acronyms
International competitiveness	L.ic1	0	1	exogenous terms-of-trade	tot
				total exports	lexp
				total imports	limp
				tariffs	tariff
Investment climate and monetary stability	L.icms1	0	1	debt service over exports	debtserexp
				total exports per capita	lexppc
				inflation rate	inflation
Financial development	L.gold			gold standard membership	
Long-run macroeconomic prospects	L.lmp1	0	1	arable land	larable
	L.lmp2	0	1	Effect. distance from London	leflondon
				5-year lag of net migration index	lagmigr
				population growth	popgrow
				schooling	school
				urbanization rate	urban
Political stability	L.ps1	0	1	extrastate war	extrawar
				interstate war	interwar5
				interstate dispute	interdisp
				internal war	intrawar
Global supply of capital	igbshortbank	3.4149	0.8576	3 mos. bills rate in London	
	igblong	2.9200	0.3120	yields of British consols	

Table 3: Factor Loadings and Uniqueness

Acronym			**Factors**			**Uniqueness**
	Ic1	**Icms1**	**Imp1**	**Imp2**	**ps1**	
tot	-0.0772					0.9940
lexp	0.9524					0.0929
limp	0.9633					0.0721
tariff	-0.6570					0.5684
debtserrev		0.4994				0.7506
lexppc		0.6904				0.5233
inflation		-0.6102				0.6277
larable			0.3302	0.1502		0.8684
leflondon			0.8044	-0.4261		0.1713
lagmigr			0.8625	0.0873		0.2484
popgrow			0.7129	0.2404		0.4340
school			-0.3429	0.8225		0.2058
urban			0.4562	0.7203		0.2731
extrawar					0.2295	0.2695
interwar5					0.7661	0.4104
interdisp					0.8025	0.3554
intrawar					0.4191	0.4768
tot	-0.0772					0.9940
% Explained	0.56	0.36	0.35	0.29	0.36	

Table 4: Extreme Bounds Analysis

Capital flow measure	Total		British		French		German	
Variables	LB	UB	LB	UB	LB	UB	LB	UB
Sovereign default	-2.387*** (-5.000)	-0.7326** (-2.090)	-1.7438*** (-5.218)	1.2421** (2.370)	-1.1654** (-1.985)	-1.1075** (-1.983)	-	-

Note: t-ratios in parenthesis. *,**,*** denote significance levels at 10, 5 and 1%, respectively.

Table 5: Bayesian Model Averaging – Determinants of real Capital Flows

	Total level of real capital													
	PIPs	Sign	PIPs	Sign	PIPs	Sign	PIPs	Sign	PIPs	Sign	PIPs	Sign	PIPs	Sign
Spec.	**(1)**		**(2)**		**(3)**		**(4)**		**(5)**		**(6)**		**(7)**	
default	1.00	-	0.39		0.02		0.00		0.00		0.00		1.00	-
International competitiveness competitiveness														
exogenous terms-of-trade	1.00	+											1.00	+
total exports	0.00												0.05	
total imports	0.00												0.94	+
tariffs	1.00	+											1.00	+
Investment climate and monetary stability														
debt service over exports			0.97	-									0.77	+
total exports per capita			0.39										0.00	
inflation rate			0.95	-									1.00	-
Financial development														
gold standard membership					0.03								0.66	+
Long-run macroeconomic prospects														
arable land							0.00						1.00	+
the effective distance from London							1.00	+					0.00	
5-year lag of net migration index							1.00	+					0.00	
population growth							0.00						0.00	
schooling							0.78	+					1.00	-
urbanization rate							1.00	+					1.00	-
Political stability														
extrastate war									0.96	-			0.15	
interstate war									0.96	-			1.00	-
interstate dispute									0.96	+			0.57	-
internal war									0.97	+			1.00	+
Global supply of capital														
3 months bills rate in London											0.95	+	1.00	+
yields on the British consols											0.97	-	1.00	-
R-squared	0.25		0.02		0.04		0.26		0.03		0.03		0.39	

Note: The dependent variable is the total level of real capital flows from 1880-1913. The variables' description is in the main text. The BMA analysis yields the posterior probabilities of inclusion (PIPs) and the sign certainty index of a relationship. A sign is given to the PIPs greater than 0.5. No sign means the sign of estimated relationship being uncertain.

Table 6: Top BMA-type Models

	1	2	3	4
Dep. Var.	Total	British	French	German
default	*	*	*,s	*,s
exogenous terms-of-trade				*,s
total exports				*
total imports				*,s
tariffs				*,s
arable land	*	*	*	
effective distance from London	*,s	*,s	*,s	
5-year lag of net migration index	*,s	*	*,s	
population growth	*	*	*,s	
schooling	*,s	*	*,s	
urbanization rate	*,s	*,s	*,s	
R-squared	0.26	0.37	0.08	0.13

Note: This table presents the top models for the total level of real capital flows and its disaggregation by country of origin. The variables' description is in the main text. * and s, denote inclusion of the variable in the BMA regression and whether it reported a statistically significant coefficient, respectively.

Table 7: Variance Decomposition of First PVAR

	lmp1	ic1	icms1	ps1	sovdef	priv
lmp1	0.9902	0.0000	0.0001	0.0007	0.0061	0.0028
ic1	0.0080	0.9623	0.0071	0.0048	0.0015	0.0161
icms1	0.0104	0.2119	0.7608	0.0048	0.0099	0.0021
ps1	0.0013	0.0019	0.0194	0.9753	0.0019	0.0002
sovdef	0.0524	0.0051	0.0002	0.0064	0.9342	0.0016
priv	0.0018	0.0986	0.0399	0.0017	0.0261	0.8317

Percentage of variation in the row variable explained by column variable

Table 8: Variance Decomposition of Second PVAR

	igblong	bank	excr	sovdef	priv
igblong	0.9169	0.0553	0.0067	0.0163	0.0045
gold	0.0014	0.9911	0.0009	0.0018	0.0047
excr	0.0002	0.0004	0.9491	0.0444	0.0057
sovdef	0.0012	0.0308	0.0180	0.9495	0.0002
priv	0.0510	0.0011	0.0048	0.0094	0.9336

Percentage of variation in the row variable explained by column variable

Table 9.1 – Total level of real Capital Flows and Sovereign Defaults

Spec.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Default	-1.523***	-1.302***	-1.297***	-1.447***	-1.493***	-1.306***	-1.218***
	(0.395)	(0.357)	(0.352)	(0.441)	(0.415)	(0.394)	(0.393)
Default duration	1.292*	1.971***	1.303**	1.251	1.236*	2.111***	1.941***
	(0.706)	(0.705)	(0.630)	(0.773)	(0.706)	(0.723)	(0.675)
L.ic1		0.079				0.117	0.141
		(0.381)				(0.476)	(0.461)
L.icms1		0.024				0.042	0.048
		(0.076)				(0.064)	(0.063)
L.gold		0.830***				0.843***	0.833***
		(0.238)				(0.239)	(0.241)
L.lmp1		0.963***				0.963***	0.943***
		(0.235)				(0.240)	(0.236)
L.lmp2		0.576				0.638	0.643
		(0.408)				(0.401)	(0.403)
L.ps1			-0.060			-0.087	-0.081
			(0.078)			(0.077)	(0.078)
Igbshortbank				0.159**		-0.043	-0.047
				(0.070)		(0.070)	(0.072)
Igblong				0.136		0.178	0.183
				(0.222)		(0.303)	(0.294)
Excr					0.000	0.001	0.001
					(0.000)	(0.001)	(0.001)
Currency crises						-0.296	
						(0.243)	
Banking crises							0.099
							(0.238)
Observations	871	737	847	871	830	737	737
R-squared	0.015	0.082	0.010	0.024	0.016	0.089	0.088

Note: The dependent variable is the sum of the deflated capital flows from Great Britain, France and Germany (in logs). All specifications include the estimate of a constant coefficient, not presented in this table for reasons of parsimony. Heteroskedastic-consistent standard errors are in parentheses, ***, ** and * denote significant coefficients, respectively at the 1, 5 and 10 % confidence levels.

Table 9.2 – Real Capital Flows per country of origin and Sovereign Defaults
Fixed Effects Estimates of Eq. 1

Spec.	**(1)** **GB**	**(2)** **France**	**(3)** **Germany**	**(4)** **GB**	**(5)** **France**	**(6)** **Germany**
Default	-0.642	-2.212***	6.981*	-0.661	-2.237***	8.972*
	(0.508)	(0.637)	(3.878)	(0.492)	(0.556)	(4.596)
Default duration	1.382*	4.950***	-6.350*	1.397*	5.017***	-9.034*
	(0.707)	(0.855)	(3.668)	(0.709)	(0.768)	(4.624)
L.ic1	-0.157	0.163	0.336	-0.169	0.209	0.384
	(0.458)	(0.371)	(0.320)	(0.468)	(0.367)	(0.301)
L.icms1	-0.033	-0.003	-0.027	-0.034	0.006	-0.011
	(0.093)	(0.063)	(0.038)	(0.092)	(0.061)	(0.049)
L.gold	0.857***	0.650*	0.052	0.856***	0.654*	0.058
	(0.268)	(0.340)	(0.293)	(0.267)	(0.341)	(0.295)
L.lmp1	1.063***	1.101**	0.601	1.067***	1.083**	0.606
	(0.256)	(0.497)	(0.478)	(0.256)	(0.500)	(0.485)
L.lmp2	0.688	0.797	0.907	0.684	0.813	0.929
	(0.461)	(0.528)	(0.723)	(0.460)	(0.537)	(0.755)
L.ps1	-0.091	-0.012	-0.017	-0.092	-0.008	-0.010
	(0.067)	(0.093)	(0.067)	(0.066)	(0.091)	(0.062)
Igbshortbank	0.035	0.065	-0.227	0.032	0.075	-0.242
	(0.076)	(0.141)	(0.168)	(0.076)	(0.130)	(0.154)
Igblong	0.320	1.291***	-0.296	0.326	1.264***	-0.273
	(0.352)	(0.301)	(0.327)	(0.359)	(0.278)	(0.322)
Excr	0.000	-0.000	-0.132	0.000	-0.000	-0.125
	(0.001)	(0.002)	(0.099)	(0.001)	(0.002)	(0.093)
Currency crises	-0.053	0.127	-0.265			
	(0.212)	(0.330)	(0.222)			
Banking crises				-0.074	0.348	0.482
				(0.205)	(0.393)	(0.538)
Observations	680	319	213	680	319	213
R-squared	0.088	0.135	0.065	0.088	0.136	0.064

Note: The dependent variable is either the deflated capital flows from Great Britain, France and Germany (in logs). All specifications include the estimate of a constant coefficient, not presented in this table for reasons of parsimony. Heteroskedastic-consistent standard errors are in parentheses, ***, ** and * denote significant coefficients, respectively at the 1, 5 and 10 % confidence levels.

Table 9.3 – Exporting Sectors and Sovereign Defaults
Fixed Effects Estimates of Eq. 1

Spec.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Default	-0.230*	-0.257**	-0.224**	-0.225*	-0.232*	-0.150	-0.144
	(0.125)	(0.122)	(0.103)	(0.128)	(0.125)	(0.193)	(0.193)
Default duration	0.164	0.291*	0.112	0.166	0.178	0.143	0.091
	(0.149)	(0.156)	(0.128)	(0.173)	(0.149)	(0.267)	(0.265)
L.ic1		-0.020				0.147	0.149
		(0.100)				(0.172)	(0.170)
L.icms1		0.048				0.070	0.070
		(0.111)				(0.113)	(0.114)
L.gold		0.201				0.192	0.188
		(0.165)				(0.157)	(0.158)
L.lmp1		-0.069				-0.091	-0.092
		(0.140)				(0.149)	(0.148)
L.lmp2		-0.435**				-0.482**	-0.487**
		(0.166)				(0.195)	(0.195)
L.ps1			0.076*			0.071	0.073
			(0.042)			(0.045)	(0.045)
Igbshortbank				0.025		0.014	0.010
				(0.026)		(0.028)	(0.029)
Igblong				-0.014		-0.308	-0.303
				(0.211)		(0.279)	(0.278)
excr					-0.002**	-0.002**	-0.002**
					(0.001)	(0.001)	(0.001)
Currency crises						-0.056	
						(0.116)	
Banking crises							0.087
							(0.107)
Observations	713	632	713	713	703	631	631
R-squared	0.001	0.029	0.011	0.001	0.002	0.045	0.046

Note: The dependent variable is the sum of the deflated capital flows from Great Britain, France and Germany (in logs). All specifications include the estimate of a constant coefficient, not presented in this table for reasons of parsimony. Heteroskedastic-consistent standard errors are in parentheses, ***, ** and * denote significant coefficients, respectively at the 1, 5 and 10 % confidence levels.

Table 9.4 – Non-exporting Sectors and Sovereign Defaults
Fixed Effects Estimates of Eq. 1

Spec.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Default	-2.007*	-2.649**	-2.016*	-2.612**	-2.028*	-4.126***	-4.040***
	(1.161)	(0.975)	(1.168)	(1.085)	(1.162)	(1.258)	(1.186)
Default duration	1.388	5.203*	1.468	3.671*	1.502	7.472**	6.864**
	(1.233)	(2.587)	(1.189)	(1.870)	(1.248)	(2.898)	(2.482)
L.ic1		4.960				2.040	2.053
		(3.120)				(1.829)	(1.804)
L.icms1		-0.551				-0.682	-0.681
		(0.587)				(0.618)	(0.618)
L.gold		0.539				0.333	0.289
		(1.743)				(1.922)	(1.941)
L.lmp1		4.479**				5.041**	5.028**
		(1.756)				(1.921)	(1.894)
L.lmp2		-1.876				-1.642	-1.703
		(2.429)				(2.260)	(2.293)
L.ps1			-0.118			-0.291	-0.272
			(0.162)			(0.196)	(0.192)
Igbshortbank				0.466		0.061	0.015
				(0.519)		(0.612)	(0.594)
Igblong				5.710*		4.344	4.391
				(2.802)		(2.857)	(2.864)
excr					-0.017*	-0.020**	-0.019**
					(0.008)	(0.009)	(0.009)
Currency crises						-0.689	
						(0.586)	
Banking crises							0.944
							(0.795)
Observations	713	632	713	713	703	631	631
R-squared	0.001	0.093	0.001	0.062	0.001	0.111	0.112

Note: The dependent variable is the sum of the deflated capital flows from Great Britain, France and Germany (in logs). All specifications include the estimate of a constant coefficient, not presented in this table for reasons of parsimony. Heteroskedastic-consistent standard errors are in parentheses, ***, ** and * denote significant coefficients, respectively at the 1, 5 and 10 % confidence levels.

Table 10.1 – Total level of real Capital Flows and Sovereign Defaults
Fixed Effects Estimates of Eq. 2

Spec.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Default year	-1.202	-1.182	0.628	-1.161	-1.148	-0.765	-1.133
	(1.082)	(0.783)	(0.802)	(1.110)	(1.140)	(0.935)	(0.942)
Default continued	-1.814***	-1.427***	-1.402***	-1.733***	-1.696***	-1.330***	-1.315***
	(0.396)	(0.326)	(0.303)	(0.448)	(0.484)	(0.359)	(0.366)
Rescheduling	-1.001**	-1.143**	-0.780**	-0.975**	-1.056**	-1.160*	-1.139*
	(0.380)	(0.540)	(0.294)	(0.442)	(0.412)	(0.597)	(0.609)
Default duration	1.165	1.838**	0.669	1.142	1.079	1.803**	1.819**
	(0.750)	(0.807)	(0.656)	(0.848)	(0.830)	(0.849)	(0.842)
Memory	-1.092***	-1.110***	-1.221***	-1.032***	-0.988***	-1.070***	-1.065***
	(0.272)	(0.350)	(0.282)	(0.278)	(0.283)	(0.341)	(0.346)
L.ic1		-0.054				-0.045	-0.010
		(0.355)				(0.438)	(0.426)
L.icms1		0.020				0.033	0.039
		(0.083)				(0.074)	(0.073)
L.gold		0.713***				0.730***	0.721***
		(0.244)				(0.245)	(0.248)
L.lmp1		1.030***				1.022***	1.012***
		(0.221)				(0.226)	(0.226)
L.lmp2		0.554				0.602	0.612
		(0.405)				(0.398)	(0.402)
L.ps1			-0.060			-0.081	-0.076
			(0.081)			(0.079)	(0.080)
Igbshortbank				0.160**		-0.039	-0.040
				(0.067)		(0.072)	(0.074)
Igblong				0.047		0.188	0.182
				(0.223)		(0.279)	(0.273)
Excr					0.001**	0.001	0.001
					(0.000)	(0.001)	(0.001)
Currency crises						-0.303	
						(0.258)	
Banking crises							0.068
							(0.243)
Observations	871	737	847	871	830	737	737
R-squared	0.030	0.100	0.033	0.038	0.029	0.106	0.105

Note: The dependent variable is the sum of the deflated capital flows from Great Britain, France and Germany (in logs). All specifications include the estimate of a constant coefficient, not presented in this table for reasons of parsimony. Heteroskedastic-consistent standard errors are in parentheses, ***, ** and * denote significant coefficients, respectively at the 1, 5 and 10 % confidence levels.

Table 10.2 – Real Capital Flows per country of origin and Sovereign Defaults
Fixed Effects Estimates of Eq. 2

Spec.	(1) GB	(2) France	(3) Germany	(4) GB	(5) France	(6) Germany
Default year	0.025			0.014		
	(1.041)			(1.037)		
Default continued	-0.450	-2.179***		-0.473	-2.192***	
	(0.477)	(0.709)		(0.477)	(0.615)	
Rescheduling	-0.516		1.535	-0.530		2.096*
	(0.753)		(0.969)	(0.747)		(1.170)
Default duration	-0.992*	0.087	1.504**	-0.986*	0.129	1.633**
	(0.484)	(0.601)	(0.652)	(0.482)	(0.584)	(0.675)
Memory	0.967	4.949***	-0.664	0.970	5.021***	-1.562*
	(0.862)	(0.858)	(0.623)	(0.863)	(0.768)	(0.793)
L.ic1	-0.314	0.168	0.477	-0.329	0.219	0.555*
	(0.421)	(0.357)	(0.305)	(0.432)	(0.349)	(0.274)
L.icms1	-0.034	-0.002	-0.032	-0.034	0.008	-0.013
	(0.107)	(0.067)	(0.041)	(0.104)	(0.066)	(0.054)
L.gold	0.763**	0.662	0.060	0.760**	0.672*	0.070
	(0.280)	(0.392)	(0.284)	(0.279)	(0.391)	(0.285)
L.lmp1	1.130***	1.095**	0.466	1.132***	1.075**	0.463
	(0.256)	(0.497)	(0.464)	(0.254)	(0.501)	(0.465)
L.lmp2	0.649	0.799	0.832	0.643	0.817	0.848
	(0.459)	(0.528)	(0.693)	(0.459)	(0.539)	(0.723)
L.ps1	-0.084	-0.012	-0.015	-0.085	-0.008	-0.008
	(0.069)	(0.093)	(0.072)	(0.068)	(0.090)	(0.067)
Igbshortbank	0.041	0.065	-0.252	0.035	0.075	-0.265*
	(0.078)	(0.141)	(0.160)	(0.077)	(0.129)	(0.144)
Igblong	0.320	1.290***	-0.328	0.332	1.259***	-0.319
	(0.342)	(0.305)	(0.324)	(0.349)	(0.284)	(0.314)
Excr	0.000	-0.000	-0.135	0.000	-0.000	-0.125
	(0.001)	(0.002)	(0.098)	(0.001)	(0.002)	(0.089)
Currency crises	-0.099	0.135	-0.228			
	(0.221)	(0.350)	(0.213)			
Banking crises				-0.080	0.366	0.612
				(0.217)	(0.407)	(0.662)
Observations	680	319	213	680	319	213
R-squared	0.103	0.135	0.080	0.103	0.136	0.082

Note: The dependent variable is either the deflated capital flows from Great Britain, France and Germany (in logs). All specifications include the estimate of a constant coefficient, not presented in this table for reasons of parsimony. Heteroskedastic-consistent standard errors are in parentheses, ***, ** and * denote significant coefficients, respectively at the 1, 5 and 10 % confidence levels.

Table 10.3 –Exporting Sectors and Sovereign Defaults
Fixed Effects Estimates of Eq. 2

Spec.	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Default year	-0.091	-0.121	0.029	-0.098	-0.102	0.079	-0.015
	(0.195)	(0.233)	(0.220)	(0.226)	(0.199)	(0.289)	(0.284)
Default continued	-0.265*	-0.226	-0.218*	-0.261*	-0.270*	-0.056	-0.086
	(0.147)	(0.177)	(0.118)	(0.145)	(0.147)	(0.216)	(0.229)
Rescheduling	-0.099	-0.222	-0.097	-0.096	-0.104	-0.141	-0.138
	(0.123)	(0.155)	(0.136)	(0.159)	(0.121)	(0.229)	(0.231)
Default duration	-0.243**	-0.066	-0.242**	-0.248*	-0.245***	-0.091	-0.095
	(0.087)	(0.188)	(0.094)	(0.129)	(0.087)	(0.213)	(0.211)
Memory	0.099	0.206	-0.026	0.100	0.119	-0.002	0.006
	(0.178)	(0.214)	(0.186)	(0.219)	(0.181)	(0.304)	(0.299)
L.ic1		-0.035				0.125	0.126
		(0.112)				(0.175)	(0.172)
L.icms1		0.043				0.065	0.065
		(0.111)				(0.112)	(0.113)
L.gold		0.199				0.190	0.186
		(0.168)				(0.161)	(0.161)
L.lmp1		-0.066				-0.087	-0.085
		(0.146)				(0.155)	(0.153)
L.lmp2		-0.435**				-0.483**	-0.487**
		(0.167)				(0.195)	(0.195)
L.ps1			0.077*			0.073	0.075
			(0.042)			(0.046)	(0.046)
Igbshortbank				0.024		0.014	0.010
				(0.026)		(0.028)	(0.029)
Igblong				-0.044		-0.307	-0.303
				(0.220)		(0.281)	(0.280)
Excr					-0.002**	-0.002**	-0.002**
					(0.001)	(0.001)	(0.001)
Currency crises						-0.060	
						(0.121)	
Banking crises							0.082
							(0.109)
Observations	713	632	713	713	703	631	631
R-squared	0.004	0.030	0.013	0.004	0.004	0.046	0.046

Note: The dependent variable is the sum of the deflated capital flows from Great Britain, France and Germany (in logs). All specifications include the estimate of a constant coefficient, not presented in this table for reasons of parsimony. Heteroskedastic-consistent standard errors are in parentheses, ***, ** and * denote significant coefficients, respectively at the 1, 5 and 10 % confidence levels.

Table 10.4 –Non-exporting Sectors and Sovereign Defaults
Fixed Effects Estimates of Eq. 2

Spec.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Default year	4.724	-2.994	4.570	2.665	4.622	-3.855	-4.948
	(4.858)	(3.007)	(4.961)	(5.874)	(4.817)	(3.651)	(3.894)
Default continued	-1.364	-2.779**	-1.424	-1.338	-1.408	-4.139***	-4.486***
	(1.324)	(1.023)	(1.357)	(1.562)	(1.316)	(1.458)	(1.485)
Rescheduling	0.970	-2.604*	0.968	-1.557	0.919	-3.937*	-3.903*
	(1.546)	(1.492)	(1.532)	(2.174)	(1.542)	(2.052)	(2.015)
Default duration	-3.421**	-0.540	-3.422**	-0.766	-3.438**	-0.376	-0.422
	(1.603)	(2.129)	(1.594)	(1.930)	(1.599)	(2.121)	(2.056)
Memory	-2.568	5.367*	-2.408	0.360	-2.390	7.289*	7.381*
	(3.192)	(2.925)	(3.293)	(4.771)	(3.154)	(3.717)	(3.695)
L.ic1		4.845				1.956	1.974
		(3.343)				(1.909)	(1.896)
L.icms1		-0.585				-0.707	-0.709
		(0.587)				(0.623)	(0.619)
L.gold		0.525				0.323	0.275
		(1.724)				(1.901)	(1.922)
L.lmp1		4.543**				5.071**	5.093**
		(1.721)				(1.883)	(1.861)
L.lmp2		-1.869				-1.643	-1.694
		(2.424)				(2.260)	(2.293)
L.ps1			-0.100			-0.287	-0.272
			(0.167)			(0.207)	(0.203)
Igbshortbank				0.449		0.061	0.015
				(0.523)		(0.617)	(0.598)
Igblong				5.625*		4.344	4.384
				(2.955)		(2.852)	(2.855)
Excr					-0.017**	-0.020**	-0.019**
					(0.007)	(0.009)	(0.009)
Currency crises						-0.688	
						(0.578)	
Banking crises							0.961
							(0.812)
Observations	713	632	713	713	703	631	631
R-squared	0.007	0.093	0.007	0.063	0.008	0.111	0.112

Note: The dependent variable is the sum of the deflated capital flows from Great Britain, France and Germany (in logs). All specifications include the estimate of a constant coefficient, not presented in this table for reasons of parsimony. Heteroskedastic-consistent standard errors are in parentheses, ***, ** and * denote significant coefficients, respectively at the 1, 5 and 10 % confidence levels.

Table 11.1 – Total level of real Capital Flows and Sovereign Defaults
Dynamic Panel (Arellano-Bond) Estimates of Eq. 1

Spec.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lagged dep. var.	0.148*	0.043	0.143*	0.147*	0.119	0.057	0.050
	(0.076)	(0.071)	(0.076)	(0.075)	(0.080)	(0.073)	(0.076)
Default	-1.378	-1.950***	-1.482	-1.335	-1.309	-2.522***	-2.080***
	(1.152)	(0.477)	(1.226)	(1.165)	(1.166)	(0.438)	(0.540)
Default duration	2.030	3.592***	2.187	1.998	1.926	4.747***	4.008***
	(1.568)	(0.808)	(1.681)	(1.552)	(1.588)	(0.842)	(0.875)
L.ic1		-0.999*				-1.157*	-0.951
		(0.573)				(0.659)	(0.707)
L.icms1		0.156				0.103	0.122
		(0.176)				(0.173)	(0.165)
L.gold		0.285				0.730	0.616
		(0.725)				(0.853)	(0.721)
L.lmp1		1.539**				2.283***	1.705**
		(0.726)				(0.588)	(0.722)
L.lmp2		0.442				0.721	0.715
		(0.446)				(0.530)	(0.467)
L.ps1			-0.069			-0.090	-0.033
			(0.111)			(0.138)	(0.138)
Igbshortbank				0.026		-0.139*	-0.090
				(0.065)		(0.073)	(0.083)
Igblong				-0.357		0.053	0.021
				(0.270)		(0.366)	(0.357)
Excr					-0.000	-0.002	-0.001
					(0.002)	(0.002)	(0.002)
Currency crises						-1.309*	
						(0.698)	
Banking crises							-0.418
							(0.383)
Observations	714	629	714	714	680	629	629
Hansen (p-value)	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AR(1) (p-value)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) (p-value)	0.554	0.686	0.536	0.558	0.747	0.613	0.776

Note: Estimation is by difference GMM (DIFF-GMM). Lagged regressors are used as suitable instruments. Robust heteroskedastic-consistent standard errors are reported in parenthesis below each coefficient estimate. The Hansen test evaluates the validity of the instrument set, i.e., tests for over-identifying restrictions. AR(1) and AR(2) are the Arellano-Bond autocorrelation tests of first and second order (the null is no autocorrelation), respectively. A constant term has been estimated but it is not reported for reasons of parsimony. *, **, *** denote significance at 10, 5 and 1% levels.

Table 11.2 – Real Capital Flows per country of origin and Sovereign Defaults Dynamic Panel (Arellano-Bond) Estimates of Eq. 1

Spec.	**(1) GB**	**(2) France**	**(3) Germany**	**(4) GB**	**(5) France**	**(6) Germany**
Lagged dep. var.	0.150**	-0.136	-0.000	0.156**	-0.147	0.018
	(0.064)	(0.093)	(0.100)	(0.062)	(0.099)	(0.105)
Default	-2.002***		1.032	-2.415***		0.479
	(0.637)		(0.698)	(0.638)		(0.795)
Default duration	3.520***	9.713***		4.142***	9.624***	
	(1.058)	(1.412)		(1.083)	(1.327)	
L.ic1	-0.652	-3.064**	-2.097	-0.812	-3.225**	-1.955
	(0.791)	(1.256)	(1.682)	(0.682)	(1.265)	(1.918)
L.icms1	0.003	0.679**	1.742**	-0.019	0.670**	1.853***
	(0.180)	(0.280)	(0.735)	(0.187)	(0.282)	(0.648)
L.gold	0.172	0.575	-0.088	0.027	0.682	0.316
	(0.906)	(0.568)	(0.346)	(1.003)	(0.564)	(0.495)
L.lmp1	1.999**	-0.930	-0.925	2.400***	-0.943	-1.029
	(0.826)	(1.550)	(0.799)	(0.738)	(1.562)	(0.863)
L.lmp2	0.035	-0.817	0.521	0.124	-0.749	1.017
	(0.695)	(2.024)	(1.517)	(0.708)	(2.024)	(1.729)
L.ps1	0.088	0.324**	0.029	0.040	0.329**	0.027
	(0.151)	(0.150)	(0.087)	(0.147)	(0.140)	(0.095)
Igbshortbank	-0.045	0.055	-0.105	-0.079	0.038	-0.235**
	(0.099)	(0.198)	(0.141)	(0.088)	(0.190)	(0.107)
Igblong	0.147	1.222	-0.762	0.223	1.279	-0.717
	(0.471)	(1.007)	(1.054)	(0.449)	(1.002)	(0.998)
Excr	-0.001	-0.299***	-0.340	-0.002	-0.303***	-0.354
	(0.002)	(0.092)	(0.231)	(0.002)	(0.093)	(0.230)
Banking crises	-0.274	-0.008	-0.796**			
	(0.462)	(0.614)	(0.342)			
Currency crises				-0.908	-0.724	0.353**
				(0.613)	(0.509)	(0.137)
Observations	547	175	84	547	175	84
Hansen (p-value)	1.000	1.000	1.000	1.000	1.000	1.000
AR(1) (p-value)	0.000	0.061	0.138	0.000	0.046	0.139
AR(2) (p-value)	0.731	0.038	0.356	0.954	0.047	0.438

Note: Estimation is by difference GMM (DIFF-GMM). Lagged regressors are used as suitable instruments. Robust heteroskedastic-consistent standard errors are reported in parenthesis below each coefficient estimate. The Hansen test evaluates the validity of the instrument set, i.e., tests for over-identifying restrictions. AR(1) and AR(2) are the Arellano-Bond autocorrelation tests of first and second order (the null is no autocorrelation), respectively. A constant term has been estimated but it is not reported for reasons of parsimony. *, **, *** denote significance at 10, 5 and 1% levels.

Table 11.3 – Exporting Sectors and Sovereign Defaults
Dynamic Panel (Arellano-Bond) Estimates of Eq. 1

Spec.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lagged dep. var.	0.286***	0.269***	0.273***	0.290***	0.266***	0.239***	0.231***
	(0.050)	(0.054)	(0.052)	(0.054)	(0.052)	(0.053)	(0.050)
Default	-0.352	0.061	-0.159	-0.361	-0.301*	0.345	0.485
	(0.227)	(0.299)	(0.279)	(0.233)	(0.177)	(0.332)	(0.368)
Default duration	0.099	-0.497	-0.111	0.093	0.141	-0.585	-0.868
	(0.315)	(0.530)	(0.490)	(0.339)	(0.270)	(0.629)	(0.795)
L.ic1		0.240				0.934	0.970
		(0.426)				(0.841)	(0.820)
L.icms1		0.400				0.522	0.487
		(0.306)				(0.353)	(0.386)
L.gold		-0.783				-0.844	-0.746
		(0.503)				(0.607)	(0.553)
L.lmp1		0.350				0.204	0.089
		(0.517)				(0.551)	(0.526)
L.lmp2		-0.640				-0.375	-0.385
		(0.428)				(0.365)	(0.357)
L.ps1			0.201***			0.175***	0.197***
			(0.068)			(0.064)	(0.068)
Igbshortbank				-0.016		0.003	0.006
				(0.032)		(0.033)	(0.041)
Igblong				0.007		-0.452	-0.496
				(0.141)		(0.334)	(0.329)
Excr					-0.018	-0.016	-0.015
					(0.014)	(0.012)	(0.011)
Currency crises						-0.567	
						(0.465)	
Banking crises							-0.092
							(0.373)
Observations	667	589	667	667	656	588	588
Hansen (p-value)	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AR(1) (p-value)	0.002	0.002	0.003	0.002	0.003	0.002	0.002
AR(2) (p-value)	0.384	0.340	0.345	0.381	0.438	0.326	0.257

Note: Estimation is by difference GMM (DIFF-GMM). Lagged regressors are used as suitable instruments. Robust heteroskedastic-consistent standard errors are reported in parenthesis below each coefficient estimate. The Hansen test evaluates the validity of the instrument set, i.e., tests for over-identifying restrictions. AR(1) and AR(2) are the Arellano-Bond autocorrelation tests of first and second order (the null is no autocorrelation), respectively. A constant term has been estimated but it is not reported for reasons of parsimony. *, **, *** denote significance at 10, 5 and 1% levels.

Table 11.4 – Non-exporting Sectors and Sovereign Defaults
Dynamic Panel (Arellano-Bond) Estimates of Eq. 1

Spec.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lagged dep. var.	0.663***	0.418***	0.661***	0.484***	0.620***	0.461***	0.385***
	(0.134)	(0.105)	(0.136)	(0.102)	(0.136)	(0.134)	(0.080)
Default	-2.357	2.526	-1.754	-3.460*	-2.349	1.646	3.979
	(1.740)	(2.987)	(1.736)	(1.892)	(1.573)	(1.986)	(3.449)
Default duration	0.632	-5.336	-0.071	4.324**	1.785	-0.911	-5.681
	(2.206)	(5.689)	(2.566)	(2.185)	(2.077)	(3.957)	(6.343)
L.ic1		15.544				12.461	13.166
		(10.103)				(8.274)	(8.751)
L.icms1		3.393*				3.424	3.260
		(1.794)				(2.305)	(2.078)
L.gold		-15.186				-15.630	-15.940
		(9.288)				(10.436)	(10.828)
L.lmp1		8.332				10.301	9.662
		(6.545)				(6.462)	(7.200)
L.lmp2		-0.033				-0.080	-0.959
		(4.031)				(3.556)	(3.578)
L.ps1			0.595**			0.526	0.855**
			(0.288)			(0.410)	(0.431)
Igbshortbank				0.206		0.199	0.253
				(0.428)		(0.682)	(0.732)
Igblong				3.826**		1.798	1.665
				(1.734)		(3.035)	(2.900)
Excr					-0.292	-0.308	-0.308
					(0.280)	(0.303)	(0.303)
Currency crises						-6.890	
						(5.692)	
Banking crises							0.043
							(1.302)
Observations	667	589	667	667	656	588	588
Hansen (p-value)	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AR(1) (p-value)	0.064	0.101	0.071	0.061	0.115	0.139	0.147
AR(2) (p-value)	0.809	0.727	0.630	0.972	0.708	0.933	0.508

Note: Estimation is by difference GMM (DIFF-GMM). Lagged regressors are used as suitable instruments. Robust heteroskedastic-consistent standard errors are reported in parenthesis below each coefficient estimate. The Hansen test evaluates the validity of the instrument set, i.e., tests for over-identifying restrictions. AR(1) and AR(2) are the Arellano-Bond autocorrelation tests of first and second order (the null is no autocorrelation), respectively. A constant term has been estimated but it is not reported for reasons of parsimony. *, **, *** denote significance at 10, 5 and 1% levels.

Table 12.1 – Total level of real Capital Flows and Sovereign Defaults
Dynamic Panel (Arellano-Bond) Estimates of Eq. 2

Spec.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lagged dep. var.	0.138*	0.026	0.136*	0.131*	0.115	0.042	0.031
	(0.077)	(0.064)	(0.077)	(0.076)	(0.081)	(0.068)	(0.069)
Default year	-2.403	-2.947**	-2.408	-2.334	-1.632	-1.891	-2.664
	(2.982)	(1.468)	(3.004)	(3.320)	(3.118)	(1.791)	(1.663)
Default continued	-3.546	-4.190**	-3.562	-3.680	-2.934	-4.224**	-4.142**
	(2.384)	(2.010)	(2.400)	(2.641)	(2.567)	(1.990)	(2.022)
Rescheduling	-0.840	-0.797	-0.860	-0.198	-0.374	-1.042	-0.859
	(1.945)	(0.916)	(1.978)	(2.268)	(2.030)	(1.034)	(1.041)
Default duration	2.197	3.186***	2.232	1.650	1.482	3.333***	3.292***
	(2.630)	(1.063)	(2.687)	(2.926)	(2.733)	(1.264)	(1.262)
Memory	-2.395*	-3.455	-2.393*	-3.384**	-2.354	-3.310	-3.476
	(1.417)	(2.225)	(1.409)	(1.655)	(1.473)	(2.244)	(2.297)
L.ic1		-1.349**				-1.527**	-1.311*
		(0.616)				(0.771)	(0.792)
L.icms1		0.180				0.133	0.151
		(0.169)				(0.168)	(0.162)
L.gold		0.347				0.711	0.511
		(0.740)				(0.879)	(0.763)
L.lmp1		0.885				1.201	0.894
		(1.348)				(1.128)	(1.427)
L.lmp2		0.788				0.885	0.893
		(0.630)				(0.634)	(0.609)
L.ps1			-0.033			-0.028	0.021
			(0.109)			(0.150)	(0.150)
Igbshortbank				0.038		-0.085	-0.033
				(0.068)		(0.082)	(0.095)
Igblong				-0.625*		0.053	-0.017
				(0.321)		(0.357)	(0.372)
Excr					0.001	-0.001	-0.000
					(0.002)	(0.002)	(0.002)
Currency crises						-1.231	
						(0.871)	
Banking crises							-0.475
							(0.499)
Observations	714	629	714	714	680	629	629
Hansen (p-value)	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AR(1) (p-value)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AR(2) (p-value)	0.464	0.624	0.457	0.423	0.691	0.687	0.748

Note: Estimation is by difference GMM (DIFF-GMM). Lagged regressors are used as suitable instruments. Robust heteroskedastic-consistent standard errors are reported in parenthesis below each coefficient estimate. The Hansen test evaluates the validity of the instrument set, i.e., tests for over-identifying restrictions. AR(1) and AR(2) are the Arellano-Bond autocorrelation tests of first and second order (the null is no autocorrelation), respectively. A constant term has been estimated but it is not reported for reasons of parsimony. *, **, *** denote significance at 10, 5 and 1% levels.

Table 12.2 – Real Capital Flows per country of origin and Sovereign Defaults Dynamic Panel (Arellano-Bond) Estimates of Eq. 2

Spec.	(1) GB	(2) France	(3) Germany	(4) GB	(5) France	(6) Germany
Lagged dep. var.	0.129**	-0.135	-0.037	0.136**	-0.145	-0.022
	(0.064)	(0.091)	(0.092)	(0.066)	(0.097)	(0.102)
Default year	-3.864**		-17.206	-3.482**		-18.833*
	(1.617)		(10.490)	(1.656)		(10.249)
Default continued	-3.802*			-3.869**		
	(1.959)			(1.954)		
Rescheduling	-1.772**			-1.916**		
	(0.786)			(0.749)		
Default duration	3.838***	9.720***		3.908***	9.615***	
	(1.047)	(1.438)		(1.091)	(1.337)	
Memory	-2.647	-1.598	18.373*	-2.524	-1.757	19.446*
	(2.096)	(7.371)	(11.039)	(2.046)	(7.197)	(10.799)
L.ic1	-0.753	-3.167***	-1.101	-0.896	-3.349***	-0.911
	(0.807)	(1.192)	(2.343)	(0.745)	(1.233)	(2.541)
L.icms1	0.003	0.688**	1.511*	-0.013	0.682**	1.614**
	(0.180)	(0.278)	(0.803)	(0.192)	(0.284)	(0.731)
L.gold	-0.133	0.487	0.121	-0.189	0.590	0.511
	(1.031)	(0.759)	(0.325)	(1.009)	(0.704)	(0.473)
L.lmp1	1.759	-0.961	-0.744	1.946	-0.976	-0.837
	(1.434)	(1.536)	(1.044)	(1.261)	(1.552)	(1.097)
L.lmp2	0.035	-0.673	-0.493	0.090	-0.588	-0.088
	(0.734)	(2.015)	(1.917)	(0.731)	(1.960)	(2.049)
L.ps1	0.126	0.320**	0.023	0.092	0.326**	0.022
	(0.156)	(0.150)	(0.089)	(0.154)	(0.137)	(0.097)
Igbshortbank	0.001	0.056	-0.102	-0.028	0.037	-0.221**
	(0.089)	(0.201)	(0.147)	(0.079)	(0.192)	(0.113)
Igblong	-0.038	1.196	-0.781	0.055	1.254	-0.740
	(0.455)	(0.992)	(1.409)	(0.444)	(0.992)	(1.371)
Excr	-0.001	-0.293***	-0.293	-0.002	-0.297***	-0.304
	(0.003)	(0.086)	(0.219)	(0.002)	(0.082)	(0.221)
Currency crises	-0.248	-0.033	-0.749**			
	(0.526)	(0.655)	(0.341)			
Banking crises				-0.706	-0.732	0.376**
				(0.691)	(0.506)	(0.155)
Observations	547	175	84	547	175	84
Hansen (p-value)	1.000	1.000	1.000	1.000	1.000	1.000
AR(1) (p-value)	0.000	0.062	0.148	0.000	0.047	0.149
AR(2) (p-value)	0.782	0.037	0.396	0.947	0.041	0.528

Note: Estimation is by difference GMM (DIFF-GMM). Lagged regressors are used as suitable instruments. Robust heteroskedastic-consistent standard errors are reported in parenthesis below each coefficient estimate. The Hansen test evaluates the validity of the instrument set, i.e., tests for over-identifying restrictions. AR(1) and AR(2) are the Arellano-Bond autocorrelation tests of first and second order (the null is no autocorrelation), respectively. A constant term has been estimated but it is not reported for reasons of parsimony. *, **, *** denote significance at 10, 5 and 1% levels.

Table 12.3 – Exporting Sectors and Sovereign Defaults
Dynamic Panel (Arellano-Bond) Estimates of Eq. 2

Spec.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lagged dep. var.	0.265***	0.282***	0.250***	0.268***	0.256***	0.247***	0.244***
	(0.052)	(0.055)	(0.053)	(0.055)	(0.054)	(0.055)	(0.051)
Default year	-1.460**	-1.768*	-1.536**	-1.490*	-1.568**	-0.746	-0.956
	(0.735)	(0.914)	(0.751)	(0.852)	(0.752)	(0.930)	(0.946)
Default continued	-1.485**	-1.577*	-1.549**	-1.845*	-1.512**	-1.111	-1.201
	(0.728)	(0.939)	(0.704)	(1.003)	(0.716)	(1.002)	(1.021)
Rescheduling	-0.291	0.030	-0.525	0.013	-0.358	0.648*	0.683*
	(0.364)	(0.226)	(0.428)	(0.298)	(0.357)	(0.386)	(0.377)
Default duration	0.830	0.225	0.979	0.559	0.992	-0.692*	-0.703*
	(0.614)	(0.252)	(0.628)	(0.590)	(0.628)	(0.378)	(0.404)
Memory	-1.152**	-1.709	-1.073**	-1.837**	-1.110**	-2.200*	-2.353*
	(0.530)	(1.108)	(0.522)	(0.937)	(0.505)	(1.270)	(1.298)
L.ic1		0.015				0.589	0.588
		(0.505)				(0.950)	(0.918)
L.icms1		0.399				0.492	0.470
		(0.338)				(0.359)	(0.387)
L.gold		-0.859				-0.880	-0.838
		(0.568)				(0.677)	(0.663)
L.lmp1		0.291				-0.109	-0.158
		(0.536)				(0.525)	(0.518)
L.lmp2		-0.381				-0.135	-0.114
		(0.439)				(0.329)	(0.354)
L.ps1			0.214***			0.227***	0.241***
			(0.075)			(0.076)	(0.079)
Igbshortbank				-0.027		0.019	0.022
				(0.033)		(0.028)	(0.031)
Igblong				-0.227		-0.463	-0.487
				(0.212)		(0.398)	(0.407)
Excr					-0.019	-0.015	-0.015
					(0.014)	(0.012)	(0.011)
Currency crises						-0.343	
						(0.408)	
Banking crises							-0.079
							(0.339)
Observations	667	589	667	667	656	588	588
Hansen (p-value)	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AR(1) (p-value)	0.002	0.003	0.003	0.002	0.003	0.002	0.003
AR(2) (p-value)	0.336	0.342	0.302	0.318	0.406	0.311	0.265

Note: Estimation is by difference GMM (DIFF-GMM). Lagged regressors are used as suitable instruments. Robust heteroskedastic-consistent standard errors are reported in parenthesis below each coefficient estimate. The Hansen test evaluates the validity of the instrument set, i.e., tests for over-identifying restrictions. AR(1) and AR(2) are the Arellano-Bond autocorrelation tests of first and second order (the null is no autocorrelation), respectively. A constant term has been estimated but it is not reported for reasons of parsimony. *, **, *** denote significance at 10, 5 and 1% levels.

Table 12.4 – Non-exporting Sectors and Sovereign Defaults
Dynamic Panel (Arellano-Bond) Estimates of Eq. 2

Spec.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lagged dep. var.	0.536***	0.423***	0.534***	0.457***	0.514***	0.479***	0.385***
	(0.140)	(0.105)	(0.144)	(0.111)	(0.139)	(0.136)	(0.080)
Default year	-1.994	-2.805	-2.099	-2.661	-5.433	2.713	-3.413
	(5.222)	(6.781)	(5.648)	(4.609)	(6.564)	(5.372)	(7.790)
Default continued	-10.703*	4.207	-10.805*	-8.178**	-13.170*	8.289	4.731
	(6.018)	(6.353)	(6.109)	(3.783)	(7.258)	(7.339)	(6.579)
Rescheduling	4.283	-0.378	3.729	0.306	2.680	-1.478	0.452
	(3.217)	(0.979)	(3.559)	(1.857)	(3.085)	(2.776)	(1.959)
Default duration	-1.843	-0.799	-1.600	2.181	1.934	0.993	-0.416
	(3.854)	(3.275)	(4.347)	(3.920)	(4.876)	(5.417)	(4.554)
Memory	-14.294**	4.469	-14.119**	-7.642**	-15.067**	9.420	3.031
	(6.969)	(6.822)	(6.861)	(3.246)	(7.484)	(9.681)	(8.074)
L.ic1		16.007				13.061	13.334
		(10.365)				(8.409)	(8.687)
L.icms1		3.886**				3.783*	3.748
		(1.918)				(2.295)	(2.311)
L.gold		-15.720				-15.469	-16.388
		(9.622)				(10.115)	(11.096)
L.lmp1		10.767				13.340	12.432
		(7.910)				(8.398)	(8.422)
L.lmp2		-0.621				-1.171	-1.223
		(4.340)				(3.854)	(3.830)
L.ps1			0.588*			0.343	0.798
			(0.333)			(0.563)	(0.490)
Igbshortbank				0.138		0.073	0.172
				(0.431)		(0.618)	(0.680)
Igblong				2.970*		2.070	1.835
				(1.660)		(3.389)	(3.153)
Excr					-0.303	-0.310	-0.314
					(0.286)	(0.308)	(0.313)
Currency crises						-7.503	
						(5.960)	
Banking crises							0.276
							(1.422)
Observations	667	589	667	667	656	588	588
Hansen (p-value)	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AR(1) (p-value)	0.075	0.098	0.083	0.067	0.129	0.138	0.150
AR(2) (p-value)	0.773	0.762	0.562	0.931	0.658	0.834	0.525

Note: Estimation is by difference GMM (DIFF-GMM). Lagged regressors are used as suitable instruments. Robust heteroskedastic-consistent standard errors are reported in parenthesis below each coefficient estimate. The Hansen test evaluates the validity of the instrument set, i.e., tests for over-identifying restrictions. AR(1) and AR(2) are the Arellano-Bond autocorrelation tests of first and second order (the null is no autocorrelation), respectively. A constant term has been estimated but it is not reported for reasons of parsimony. *, **, *** denote significance at 10, 5 and 1% levels.

Table 13.1 – Total Capital Flows and Sovereign Defaults
3 Stage Least Squares Estimates of Eq. 2

Spec.	(1)		(2)		(3)		(4)	
Equations	**demand**	**supply**	**demand**	**supply**	**demand**	**supply**	**demand**	**supply**
Spreads	0.012		0.026		0.045		0.054	
	(0.309)		(0.065)		(0.354)		(0.067)	
Default	-8.373*	3.870	-8.434*	3.870	-6.452	4.948**	-6.503*	4.948**
	(5.078)	(2.980)	(4.905)	(2.980)	(4.203)	(2.321)	(3.733)	(2.321)
Default continued	-8.110*	10.106***	-8.259**	10.106***	-5.465	10.434***	-5.565**	10.434***
	(4.716)	(2.048)	(3.442)	(2.048)	(4.644)	(1.613)	(2.688)	(1.613)
Rescheduling	-6.503*	2.353	-6.539*	2.353	-4.324	6.132***	-4.385	6.132***
	(3.683)	(2.176)	(3.597)	(2.176)	(3.812)	(1.874)	(3.043)	(1.874)
Default duration	10.272**	-2.195	10.308**	-2.195	7.079*	-4.138*	7.122**	-4.138*
	(4.786)	(2.866)	(4.724)	(2.866)	(3.960)	(2.248)	(3.619)	(2.248)
Memory	-0.851	2.852***	-0.891*	2.852***	-1.552***	1.355***	-1.564***	1.355***
	(0.982)	(0.256)	(0.463)	(0.256)	(0.581)	(0.228)	(0.376)	(0.228)
L.ic1					0.472***	-0.297***	0.475***	-0.297***
					(0.154)	(0.064)	(0.105)	(0.064)
L.icms1					-0.453***	0.260***	-0.455***	0.260***
					(0.134)	(0.061)	(0.100)	(0.061)
L.gold					0.048	-0.912***	0.057	-0.912***
					(0.381)	(0.096)	(0.166)	(0.096)
L.lmp1					0.707***	-0.022	0.707***	-0.022
					(0.063)	(0.039)	(0.063)	(0.039)
L.lmp2					0.704***	0.146***	0.703***	0.146***
					(0.092)	(0.049)	(0.079)	(0.049)
L.ps1					0.123	0.140***	0.122*	0.140***
					(0.086)	(0.043)	(0.070)	(0.043)
Excr					-0.015***	0.006*	-0.015***	0.006*
					(0.005)	(0.003)	(0.005)	(0.003)
Banking crises					0.039	0.338**	0.036	0.338**
					(0.272)	(0.152)	(0.244)	(0.152)
igbshortbank		-0.132*		-0.132*		-0.026		-0.026
		(0.077)		(0.077)		(0.064)		(0.064)
igblong		-0.676***		-0.677***		-0.584***		-0.584***
		(0.188)		(0.188)		(0.157)		(0.157)
Observations	611	611	611	611	561	561	561	561
R-squared	0.018	0.527	0.018	0.527	0.420	0.716	0.420	0.716

Note: Estimation by three-stage-least-squares using OLS or ML. A constant term has been estimated but it is not reported for reasons of parsimony. *, **, *** denote significance at 10, 5 and 1% levels.

Table 13.2 – Exporting Sectors and Sovereign Defaults
3 Stage Least Squares Estimates of Eq. 2

Spec.	(1)		(2)		(3)		(4)	
Equations	demand	supply	demand	supply	demand	supply	demand	supply
Spreads	0.096		-0.039		0.221		0.007	
	(0.133)		(0.040)		(0.213)		(0.047)	
Default	-1.840	17.006	0.633	17.006	-4.066	15.589	-0.613	15.597
	(11.175)	(11.918)	(10.772)	(11.918)	(11.172)	(9.979)	(10.401)	(9.979)
Default continued	-2.654	20.470**	0.290	20.464**	-4.969	18.487**	-0.898	18.491**
	(9.835)	(10.271)	(9.303)	(10.271)	(10.023)	(8.604)	(8.990)	(8.604)
Rescheduling	-1.230	15.676*	1.036	15.671*	-3.647	15.262**	-0.269	15.266**
	(8.401)	(8.851)	(8.010)	(8.851)	(8.590)	(7.420)	(7.749)	(7.420)
Default duration	1.252	-12.179	-0.538	-12.176	2.955	-11.530	0.393	-11.537
	(11.036)	(11.902)	(10.747)	(11.902)	(10.927)	(9.975)	(10.385)	(9.975)
Memory	-1.249***	3.073***	-0.818***	3.075***	-1.094***	1.424***	-0.800***	1.426***
	(0.484)	(0.259)	(0.264)	(0.259)	(0.399)	(0.255)	(0.272)	(0.255)
L.ic1					0.060	-0.474***	-0.049	-0.474***
					(0.139)	(0.083)	(0.089)	(0.083)
L.icms1					-0.191**	0.105	-0.168**	0.105
					(0.075)	(0.067)	(0.069)	(0.067)
L.gold					0.211	-0.768***	0.020	-0.768***
					(0.221)	(0.108)	(0.117)	(0.108)
L.lmp1					0.179***	-0.033	0.171***	-0.033
					(0.047)	(0.044)	(0.046)	(0.044)
L.lmp2					-0.073	0.049	-0.067	0.049
					(0.066)	(0.062)	(0.064)	(0.062)
L.ps1					0.138**	0.129***	0.166***	0.129***
					(0.056)	(0.045)	(0.047)	(0.045)
Excr					-0.009**	0.011***	-0.007*	0.011***
					(0.004)	(0.003)	(0.004)	(0.003)
Banking crises					0.077	0.070	0.086	0.072
					(0.181)	(0.171)	(0.176)	(0.171)
igbshortbank		-0.190**		-0.199**		-0.128*		-0.133*
		(0.082)		(0.083)		(0.069)		(0.070)
igblong		-0.891***		-0.876***		-0.555***		-0.546***
		(0.199)		(0.201)		(0.170)		(0.172)
Observations	465	465	465	465	462	462	462	462
R-squared	0.013	0.649	0.042	0.649	0.077	0.757	0.121	0.757

Note: Estimation by three-stage-least-squares using OLS or ML. A constant term has been estimated but it is not reported for reasons of parsimony. *, **, *** denote significance at 10, 5 and 1% levels.

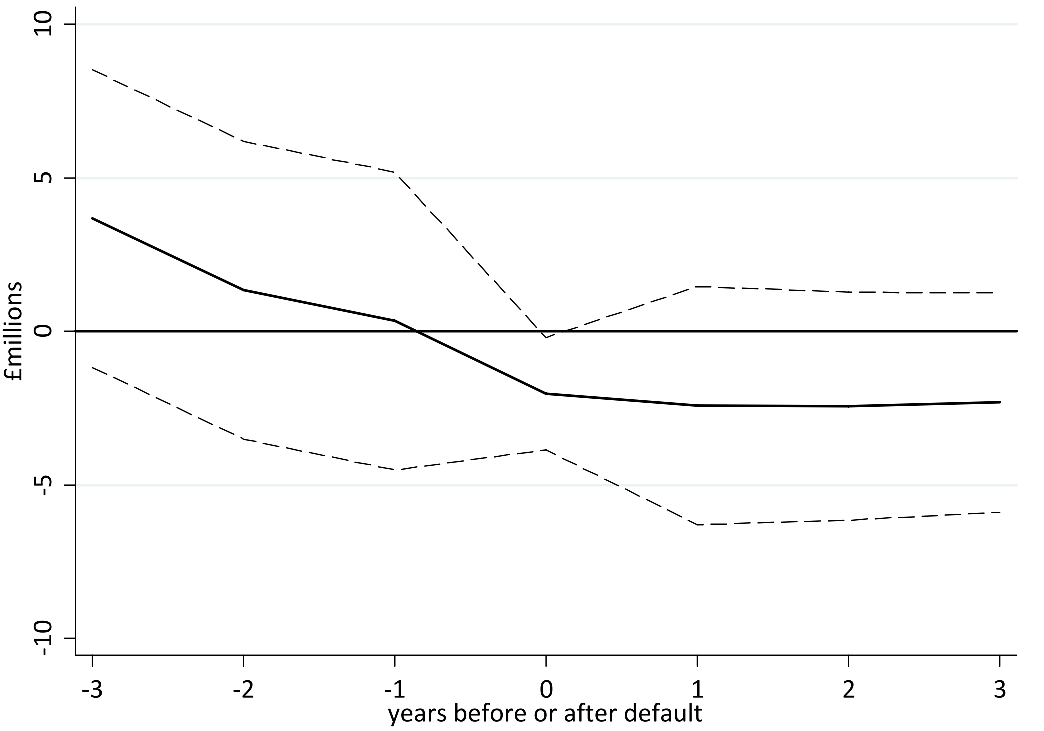
Table 13.3 – Non-exporting Sectors and Sovereign Defaults
3 Stage Least Squares Estimates of Eq. 2

Spec.	(1)		(2)		(3)		(4)	
Equations	**demand**	**supply**	**demand**	**supply**	**demand**	**supply**	**demand**	**supply**
Spreads	-7.582***		-2.136***		-11.836***		-1.049**	
	(1.729)		(0.446)		(3.224)		(0.501)	
Default	118.248	16.999	18.774	16.967	181.533	15.513	7.588	15.561
	(145.434)	(11.918)	(120.772)	(11.918)	(168.705)	(9.978)	(110.766)	(9.979)
Default continued	142.169	20.478**	23.736	20.426**	215.363	18.447**	10.312	18.459**
	(127.990)	(10.271)	(104.294)	(10.271)	(151.351)	(8.604)	(95.730)	(8.604)
Rescheduling	109.888	15.680*	18.746	15.640*	176.233	15.219**	6.047	15.235**
	(109.329)	(8.851)	(89.799)	(8.851)	(129.724)	(7.420)	(82.520)	(7.420)
Default duration	-77.042	-12.180	-5.030	-12.144	-130.579	-11.461	-1.508	-11.507
	(143.616)	(11.902)	(120.490)	(11.902)	(165.012)	(9.975)	(110.596)	(9.975)
Memory	19.719***	3.066***	2.386	3.071***	16.442***	1.413***	1.640	1.427***
	(6.300)	(0.258)	(2.964)	(0.259)	(6.028)	(0.255)	(2.901)	(0.255)
L.ic1					-5.320**	-0.472***	0.149	-0.472***
					(2.106)	(0.083)	(0.948)	(0.083)
L.icms1					-2.365**	0.106	-3.528***	0.105
					(1.125)	(0.067)	(0.739)	(0.067)
L.gold					-10.447***	-0.770***	-0.819	-0.762***
					(3.337)	(0.108)	(1.247)	(0.108)
L.lmp1					3.194***	-0.034	3.582***	-0.033
					(0.715)	(0.044)	(0.486)	(0.044)
L.lmp2					-0.491	0.050	-0.804	0.050
					(1.000)	(0.062)	(0.685)	(0.062)
L.ps1					2.244***	0.127***	0.814	0.128***
					(0.844)	(0.045)	(0.505)	(0.045)
Excr					0.017	0.011***	-0.073*	0.011***
					(0.061)	(0.003)	(0.038)	(0.003)
Banking crises					1.897	0.056	1.480	0.072
					(2.728)	(0.170)	(1.876)	(0.171)
igbshortbank		-0.166**		-0.202**		-0.081		-0.135*
		(0.071)		(0.083)		(0.051)		(0.070)
igblong		-0.939***		-0.909***		-0.652***		-0.585***
		(0.181)		(0.201)		(0.141)		(0.172)
Observations	465	465	465	465	462	462	462	462
R-squared	-0.342	0.649	0.030	0.649	-0.689	0.757	0.198	0.757

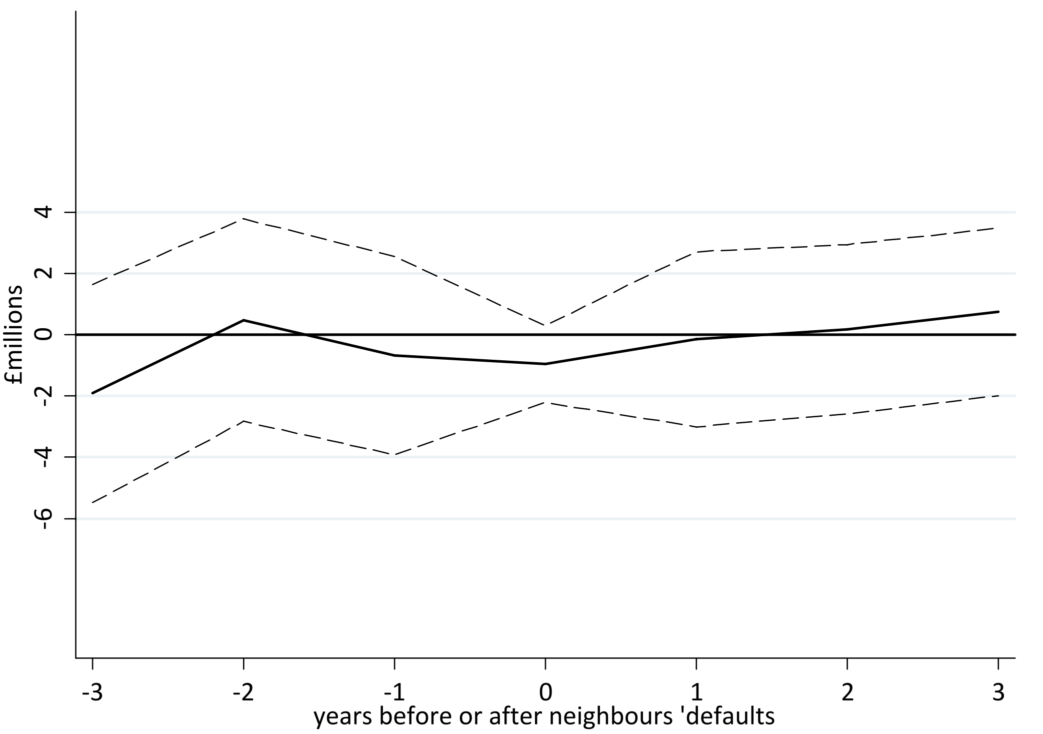
Note: Estimation by three-stage-least-squares using OLS or ML. A constant term has been estimated but it is not reported for reasons of parsimony. *, **, *** denote significance at 10, 5 and 1% levels.

Figure 1: Capital Inflows to the Private Sector around Default Episodes

Panel A: Defaulting Nations



Panel B: Their Neighbours



Note: authors' calculations. Dashed lines represent the 95% confidence intervals of the OLS estimates.

Figure 2: Factor Loadings for Macro Fundamentals

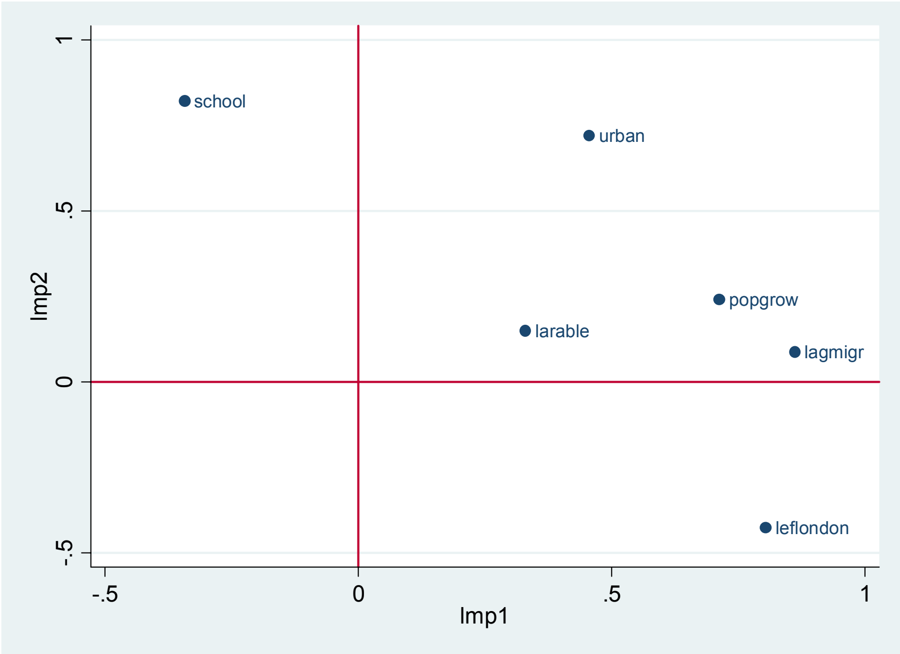
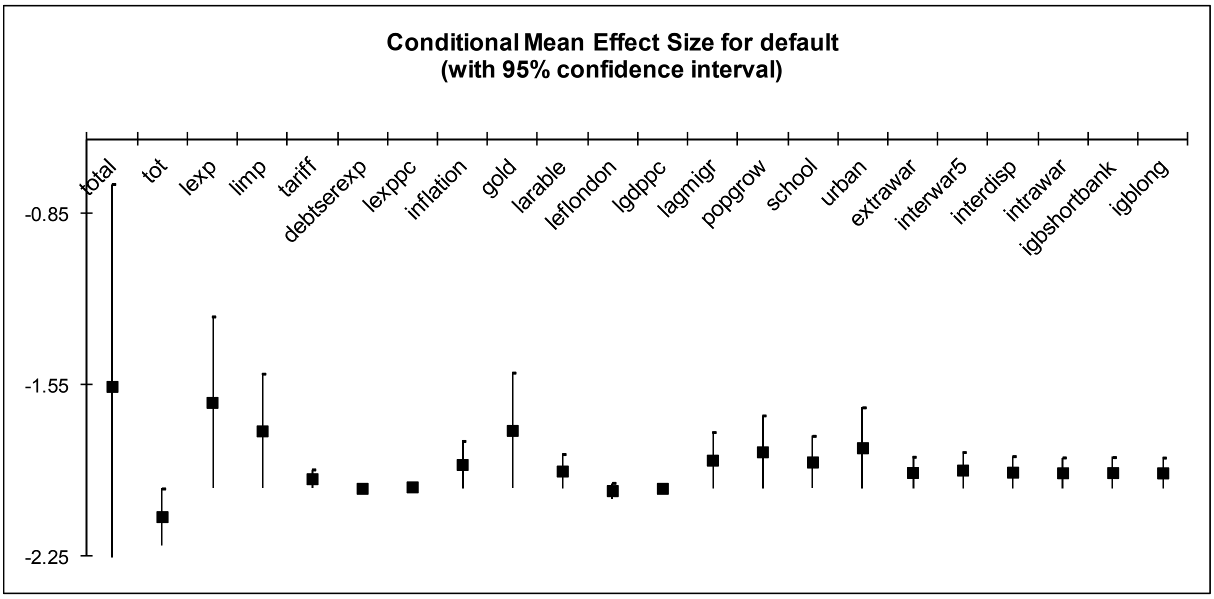


Figure 3: Conditional Mean Effect Size for Sovereign Default Coefficient



Note: authors' calculations.

Figure 4

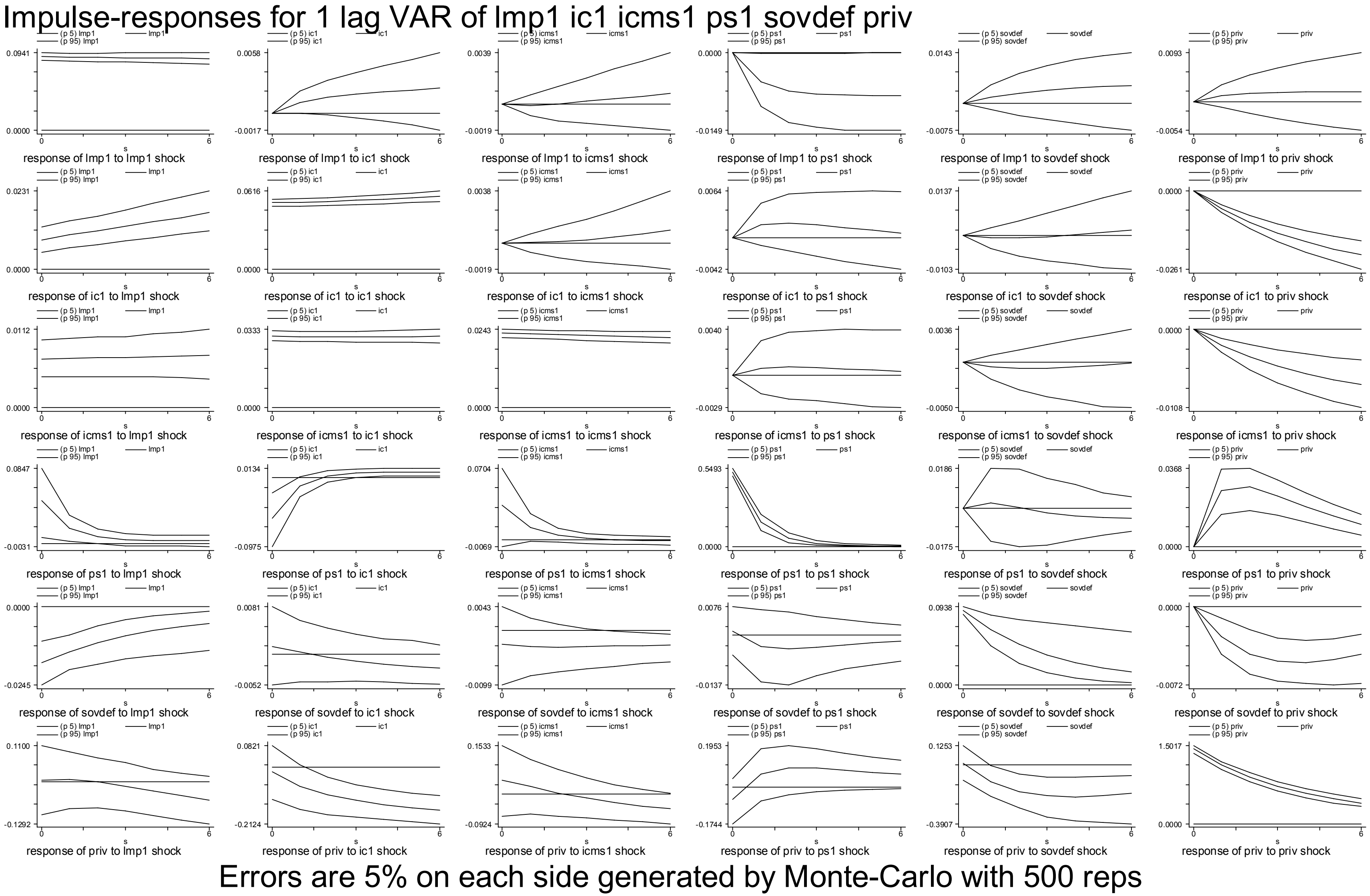

Impulse-responses for 1 lag VAR of lmp1 ic1 icms1 ps1 sovdef priv
response of lmp1 to lmp1 shock
response of lmp1 to ic1 shock
response of lmp1 to icms1 shock
response of lmp1 to ps1 shock
response of lmp1 to sovdef shock
response of lmp1 to priv shock
response of ic1 to lmp1 shock
response of ic1 to ic1 shock
response of ic1 to icms1 shock
response of ic1 to ps1 shock
response of ic1 to sovdef shock
response of ic1 to priv shock
response of icms1 to lmp1 shock
response of icms1 to ic1 shock
response of icms1 to icms1 shock
response of icms1 to ps1 shock
response of icms1 to sovdef shock
response of icms1 to priv shock
response of ps1 to lmp1 shock
response of ps1 to ic1 shock
response of ps1 to icms1 shock
response of ps1 to ps1 shock
response of ps1 to sovdef shock
response of ps1 to priv shock
response of sovdef to lmp1 shock
response of sovdef to ic1 shock
response of sovdef to icms1 shock
response of sovdef to ps1 shock
response of sovdef to sovdef shock
response of sovdef to priv shock
response of priv to lmp1 shock
response of priv to ic1 shock
response of priv to icms1 shock
response of priv to ps1 shock
response of priv to sovdef shock
response of priv to priv shock
Errors are 5% on each side generated by Monte-Carlo with 500 reps

Figure 5

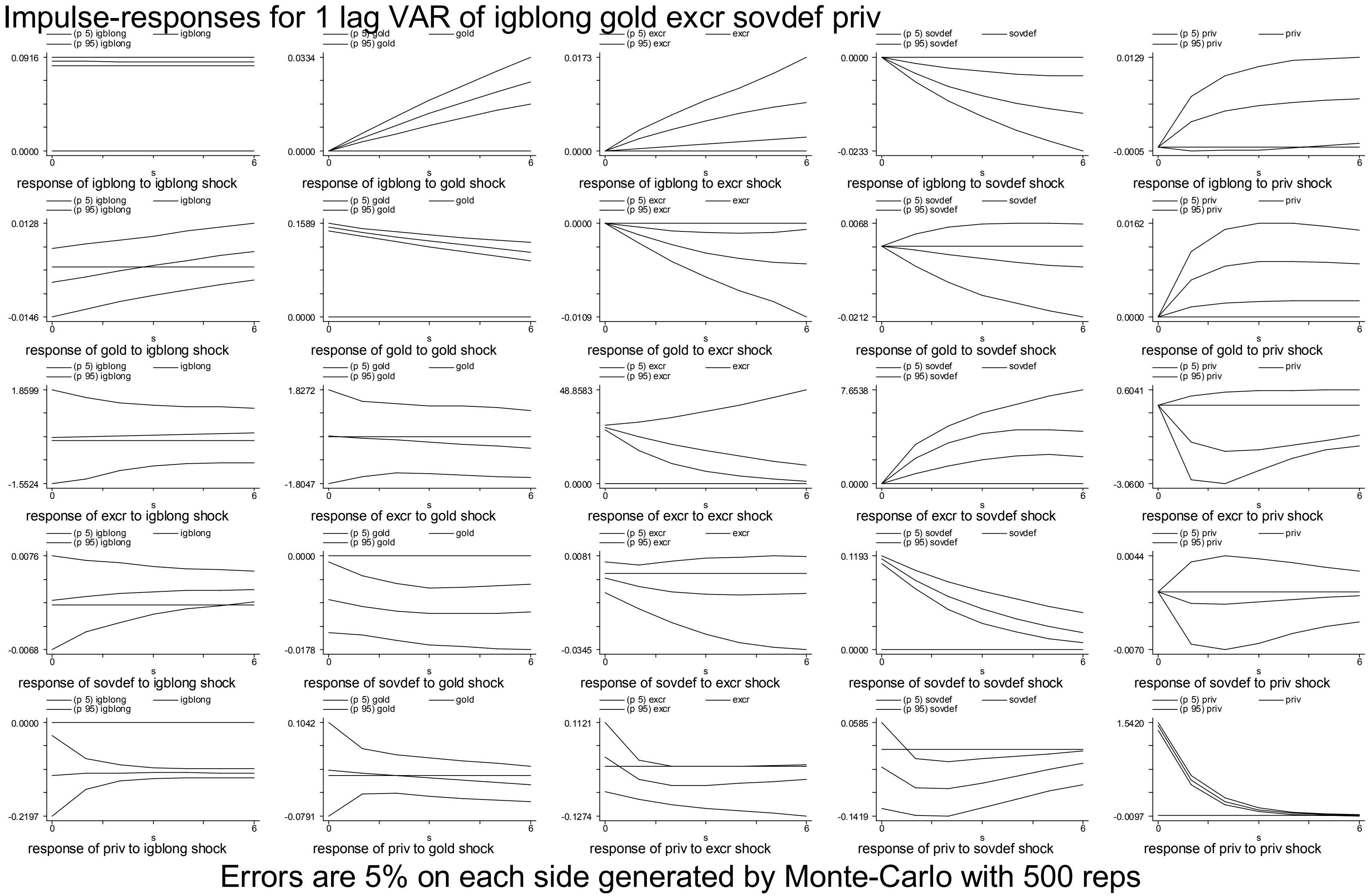

Impulse-responses for 1 lag VAR of igblong gold excr sovdef priv
response of igblong to igblong shock
response of igblong to gold shock
response of igblong to excr shock
response of igblong to sovdef shock
response of igblong to priv shock
response of gold to igblong shock
response of gold to gold shock
response of gold to excr shock
response of gold to sovdef shock
response of gold to priv shock
response of excr to igblong shock
response of excr to gold shock
response of excr to excr shock
response of excr to sovdef shock
response of excr to priv shock
response of sovdef to igblong shock
response of sovdef to gold shock
response of sovdef to excr shock
response of sovdef to sovdef shock
response of sovdef to priv shock
response of priv to igblong shock
response of priv to gold shock
response of priv to excr shock
response of priv to sovdef shock
response of priv to priv shock
Errors are 5% on each side generated by Monte-Carlo with 500 reps

Figure 6: Reduced-Form Estimates of Impact of Defaults on Capital Inflows