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What Explains the Speed of Recovery from Banking Crises?

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What Explains the Speed of Recovery from Banking Crises?

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Abstract

While a large body of research has explored the causes and effects of banking crises, less is known about what determines recovery from banking crises, despite large variations in post-crisis performances across countries. In order to identify local and global factors that determine the length of recovery (i.e. the time it takes until countries reach their pre-crisis level of per capita GDP), this exploratory paper employs event-history analysis on 138 incidents of banking crises between 1970 and 2012. Regarding domestic factors, the simultaneous occurrence of currency crises, large financial sectors, overvalued currencies and large primary deficits are associated with later recovery, whereas higher debt-to-GDP ratios or inflation levels do not exhibit a negative effect on post-crisis performances. Regarding external factors, a low growth of world trade as well as indicators of uncertainty in financial markets are correlated with later recovery. Global interest rate shocks are particularly harmful for the speed of recovery among middle-income countries with a strong reliance on external capital. The results are similar when using the length of recessions as an alternative indicator of post-crisis performances.

JEL Classification: H12, E44, O23

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I. Introduction and Empirical Puzzle

The most recent series of banking crises since 2008 has brought banking crises and their resolution back on the agenda, calling to mind that banking crises are a regular feature of market economies. Laeven and Valencia (2012) count 147 cases of banking crises since 1970, haunting advanced economies and developing countries alike (Reinhart and Rogoff 2013).

The empirical puzzle that motivates this research is posed by the vast differences in the economic performance of countries during post-crisis periods. While some countries recovered relatively quickly from banking crises, others entered long-lasting recessions. In order to explore the drivers of post-crisis performances, this paper employs event-history analysis to study the effect of crises- and country-specific variables, crises policies as well as external factors on the speed of recovery, defined as the number of years that it takes to reach pre-crisis levels of per capita GDP.

Figure 1 plots the duration of recovery from banking crises incidents (i.e. the number of years it takes to reach pre-crisis per capita GDP, on the vertical axis) on a time line from 1970 to 2013 for a sub-sample of banking crises incidents. While the length of recovery in most countries falls within a range between one and five years, recovery took close to or even more than two decades in several cases¹. In order to depict duration in relation to the severity of crises, the size of circles is drawn proportional to the share of peak non-performing loans (NPL) relative to all loans, using data from Laeven and Valencia (2012). Note that most of the recent banking crises experiences are not included in Figure 1, because recovery had not yet occurred by 2013 in many countries. Nonetheless, differences in post-crisis performances of the European periphery (Greece, Spain, Portugal) also provide puzzling contrasts to the more rapid recovery of the European Center (Germany, Netherlands, Switzerland) or the

¹ Among others Argentina 1980, Burundi 1994, Ivory Coast 1988 and Cameroon 1987, see also the online appendix. The mean duration of recovery in the entire sample was 4.9 years and the median duration of recovery was three years, compared to a mean of eight years and a median of 6.5 years in 100 banking crises episodes studied by Reinhart and Rogoff (2014).

European North (Great Britain, Ireland, Iceland) that cannot be well explained by differences in the magnitude of banking crises alone.

[FIGURE 1: DURATION OF RECOVERY FROM BANKING CRISES]

This paper is exploratory in nature, whereby the goal of the empirical analysis is to identify factors associated with the speed of recovery. Rather than testing a specific hypothesis, the selection of a large number of country-level and global variables is guided by general expectations regarding the constraining role of either local or global conditions. Several potential drivers of post-crisis economic performances will be evaluated. First, the type and severity of banking crises is expected to have an effect on the duration of recovery. In concrete, larger shares of non-performing loans and the simultaneous occurrence of sovereign debt or currency crises are expected to be associated with longer duration. On the one hand, larger shares of affected assets increase the costs of rescue packages, while on the other, twin or triple crises constrain the ability of countries to undertake costly interventions in the financial sector or employ indirect crises policies of anti-cyclical monetary, fiscal or exchange rate policies. Second, country conditions are potentially correlated with the length of recovery. Country-specific variables considered in this paper include levels of debt and inflation, variables related to the balance-of-payment and exchange rates, as well as the size and regulation of the banking sector. The expectation is that countries with large and weakly regulated financial sectors are more exposed to distress in their banking sectors, while high levels of debt and inflation may limit countries' ability to employ fiscal and monetary policies. Variables related to the balance-of payments and the exchange rate may either impose constraints on crises policies or reflect imbalances that require costly adjustments. Third, an unfavorable external environment is expected to postpone recovery. External conditions may be related to financing constraints (e.g. the level of international interest rates and degrees of uncertainty in financial markets), as well as the size and dynamics of export markets and the evolution of terms-of-trade that may act as a driver (or impediment) of export-led growth. All three factors have an effect on countries' ability to effectively employ

crises policies, either in the form of direct financing of rescue packages or through implementing anti-cyclical fiscal, monetary or exchange rate policies.

The remainder of this paper is structured as follows: The following chapter II relates this paper to existing research. Chapter III presents the data and explains the use of a Cox proportional hazards model to estimate event histories. Chapter IV presents the results. Regarding domestic factors, in particular simultaneous currency crises, large financial sectors, overvalued currencies and large primary deficits are associated with later recovery, whereas higher debt-to-GDP ratios or higher inflation levels do not have a negative effect on post-crisis performances. Moreover, long-lasting crises tend to be accompanied by larger increases in the monetary base. Regarding external factors, a low growth of world trade is correlated with later recovery, as does uncertainty in financial markets, reflected in high gold prices or high stock market volatility. Finally, global interest rate shocks negatively affect the recovery of middle-income emerging markets with a strong reliance on private foreign capital. Chapter V addresses the robustness of the findings to the choice of indicators, obtaining similar results when the length of post-crisis recessions is used as an alternative dependent variable. Finally, chapter VI concludes.

II. Related Literature and Contribution to Research

A considerable body of literature has documented the negative consequences of financial and banking crises, including the often slow and painful paths to recovery (e.g. Jordá, Schularick, and Taylor 2013; Jordá, Schularick, and Taylor 2016; Reinhart and Rogoff 2014; Reinhart and Rogoff 2009; Demirgüç-Kunt, Detragiache, and Gupta 2006; Boyd, Kwak, and Smith 2005; M. M. Hutchison and Noy 2005; Hoggarth, Reis, and Saporta 2002; P. Gupta 2005; Serwa 2010). Banking crises negatively affect growth via both a financial and real channel. Dell’Ariccia et al. (2008) and Kroszner et al. (2007) observe that sectors that are more dependent on external finance perform relatively worse during banking crises due to credit contraction. In addition, credit contraction fuels recessions through feedback effects on real economic activity. Consequently, most countries have taken measures to contain banking crises and prevent the failure of institutions with systemic implications, despite concerns over moral hazard dilemmas and high costs to the public.

The economic costs of banking crises are usually measured in three alternative ways (cp. Claessens et al. 2012, 14): via the direct fiscal costs of bailouts (e.g. Grossman and Woll 2014; Laeven and Valencia 2012), as their broader fiscal costs as reflected in an the increase of debt levels (e.g. Furceri and Zdzienicka 2012c; Laeven and Valencia 2012; Reinhart and Rogoff 2009; Schularick 2012) or as deviations from an assumed long-term growth path over a given horizon (e.g. Angkinand 2009; Furceri and Zdzienicka 2012a; M. M. Hutchison and Noy 2005; Laeven and Valencia 2012). These authors identified the largest cumulative effect from banking crises on output loss as occurring after two to four years following banking crises. Estimates of absolute output losses can be calculated by summing up differences between the actual output and a projection from trend output for a certain post-crisis period. Depending on how effects are measured, the evaluation of costs of banking crises may differ. Some cases had large costs in terms of GDP loss but relatively low direct fiscal costs and vice versa.

Despite large variations in the effects of banking crises and contrasting paths of recovery, relatively little is known about how country-specific contexts shape and determine the effects of banking crises and the speed of recovery. A general lesson from country studies (e.g. Calomiris, Klingebiel, and Laeven 2005; Hausmann and Rojas-Suárez 1996; M. Hutchison and McDill 1999; Ingves and Lind 1996; Kanaya and Woo 2000; Krueger and Tornell 1999; Rojas-Suárez and Weisbrod 1996) is that rapid and decisive action of cleaning bank balance sheets seems to have been favorable for resolving banking crises and quickly recovering growth. Countries that have taken such decisive actions (the Swedish banking crisis in the 1990s often being cited as a positive example, see for example Claessens et al. 2012; Jonung 2009) are generally considered as success cases, while other countries that have been more hesitant in solving banking crises (e.g. Mexico 1994, see Haber 2005) have suffered prolonged periods of financial distress. Furceri and Zdzienicka (2012a) have studied the effect of structural and policy variables on the short-term growth effects of banking crises in a sample of developing countries and emerging markets. In line with Gupta et al. (2013), they find that additional supportive measures such as countercyclical fiscal or monetary policies have mitigated the negative effects of crises by stimulating aggregate demand. Furthermore, countries with flexible exchange rates and those with lower external disequilibria were characterized by less

severe drops in output (Furceri and Zdzienicka 2012a). Political scientists have placed emphasis on country-specific contexts and the institutional settings in which banking crises resolutions are implemented. Grossmann and Woll (2014) argue that business-government relationships partly explain the design of rescue packages during the recent financial crises. Countries in which banks collectively negotiated developed solutions with a greater burden-sharing from private institutions. Rosas (2006) states that – among others – central banks' independence and a larger degree of transparency have limited the bailout propensities of governments in emerging markets and developing countries.

Constraints in banking crises resolution are particularly severe in developing countries and emerging markets. Hutchison and Noy (2005), Dell'Ariccia et al. (2008) and Cerra and Saxena (2008) find that the effect of banking crises in emerging markets and developing countries is larger and more persistent, because the high risk of simultaneous twin or triple crises (i.e. simultaneous currency and/or sovereign debt crises) in emerging markets and developing countries and – more generally – their limited capacity to set and enforce rules in the financial sector have been recognized as factors that may increase the costs of banking crises. Laeven and Valencia (2012) emphasize that the mix of resolution tools differs among developed and emerging countries, reflecting a different set of available options. Emerging economies relied less on expansionary fiscal and monetary policies. Despite being rare, deposit freezes were most frequently used by emerging economies, whereas guarantees on bank liabilities are more common among advanced economies. Moreover, with respect to direct interventions, Calomiris et al. (2005) conclude from a comparison of seven cases of financial crises that legal, regulatory and political constraints have been an impediment to successful resolutions in emerging markets (Calomiris, Klingebiel, and Laeven 2005, 69). Notwithstanding their more restricted policy space, the general assessment that costs of banking crises are larger in emerging markets and developing countries has been questioned by recent studies that take into account the series of banking crises in advanced economies after 2008 (Laeven and Valencia 2012). Here, it seems that the large size of the financial sector in many of the advanced economies that recently suffered from banking crises led to large output losses, high direct fiscal costs and an increase in public debt. Furthermore, within developing countries and

emerging markets, countries with higher financial deepening had larger output losses from banking crises (Furceri and Zdzienicka 2012a).

This paper complements previous studies on banking crises outcomes by focusing on the case-specific context factors as determinants of recovery rather than on average effects. For this purpose, estimating the effects of banking crises via output loss or debt increase over a pre-defined period holds limited use because the effects of a banking crisis may last much longer than the immediate post-crisis period upon which most papers have focused. The cumulative peak output loss that has been estimated to occur after two to four years following a banking crisis refers to average effects that hide large differences in times of recovery. Second, calculating output loss as deviations from inherent trend growth rates specific to each country relies on assumptions² that are empirically at odds with the typically volatile growth rates in developing countries and emerging markets. Moreover, economic booms often precede busts that bias the projection of trend growth based upon previous growth rates. Hence, length of recovery seems more suitable in terms of accounting for the diverse post-crises performances across countries and to make the mid-to-long-term effects of banking crises visible.

III. Data and Method

This paper estimates duration of recovery as a result of crises characteristics, country-specific conditions, crises policies and time-varying global factors. The sample used for the analysis comprises 138 countries that suffered from a systemic banking crisis between 1970 and 2012. Data on banking crises episodes is taken from Laeven and Valencia (2012), who count 147 cases of systemic banking crises during this period. Nine cases from the original sample were excluded from the analysis because no data on per capita GDP was available for the crisis (or post-crisis) period.

² For example, full capacity utilization is a typical assumption in neo-classical growth models.

Length of Recovery from Banking Crises

As in Reinhart and Rogoff (2014; 2009) for 100 banking crises episodes in a long historical perspective, the duration of recovery is measured as the time that it takes to recover to pre-crisis levels of per capita income. Defining this indicator on a quarterly basis is preferred over a measurement in years because it allows a finer distinction of the length of recovery between countries. Quarterly GDP data is taken from the International Financial Statistics (IFS) by the IMF. Quarterly time series have been smoothed by taking out seasonal effects. For countries where no quarterly data was available, yearly data was interpolated to quarterly data using polynomial splines. Due to better coverage, yearly WDI data was used rather than yearly IFS data in some cases³. Duration of recovery (RECOV) was subsequently defined by counting the quarterly years from the first drop in real per capita incomes in either the year of the crisis or the following year until the quarter when countries reached their real income level as it existed before the drop in per capita incomes. In order to address the robustness of the results to the choice of the dependent variable, chapter V repeats the analysis on the length of post-crisis recessions (RCSN) as an alternative indicator of post-crisis performance. The length of recessions is defined as the time that it takes to reach a structural “up break” in per capita growth above a threshold of at least 0.5 percent. The duration of recovery and the length of post-crisis recessions are estimated conditional upon the type and severity of crises, a large number of country-specific variables prior to the outbreak of the crisis, crises policies employed by countries as well as exogenous time-varying global factors that are observed for each of the quarterly periods. A set of standard growth predictors is used as control variables.

Types of Crises and Standard Growth Predictors

A first set of variables captures severity and type of crises. CURRCR and DEBTCR are binary indicators concerning whether a currency crisis (CURRCR) or a sovereign debt crisis (DEBTCR) occurred in the year of the banking crises or the previous year. CURRCR captures the negative growth effects of sudden devaluations. Moreover,

³ The main results are unchanged when using a yearly indicator rather than quarterly data. See online appendix for hazard plots based on a yearly indicator.

efforts to defend exchange rates in the context of currency crises may eventually conflict with other policy goals such as anti-cyclical monetary policy. DEBTCR captures additional financing constraints under sovereign defaults. In addition, PKNPL measures peak non-performing loans as a share of bank assets as an indicator of the severity of crises, taken from Laeven and Valencia (2012).

As control variables, the proportional hazards model includes a set of standard growth predictors. Recent growth history is accounted for by trend GDP, measured as the average growth rate over a ten-year period prior to the outbreak of the banking crisis (GDPTRD). In addition, GDPVOL measures the volatility of growth as the standard deviation of the growth rate over the same period. HUMCAP is included as an indicator for the level of human capital, measured as the average years of schooling among the adult population. INClog is the log of per capita GDP in 2005 USD, capturing different growth rates among advanced economies and developing countries, as well as the generally larger vulnerability of emerging markets and developing countries to external shocks. XPSH (merchandise trade relative to GDP) is included as a measure of trade openness.⁴

Country-Specific Conditions

A second set of variables is related to country-specific conditions. First, a number of macroeconomic policy variables are included. DBTGDP indicates the level of public debt relative to GDP, suspecting that already large levels of debt pose constraints on borrowing. Additionally, the average annual change of DBTGDP over the previous five years (DBTGDPd) is included next to INFL (the log of annual consumer prices inflation) as indicators of macroeconomic stability. PRBAL indicates the primary balance, defined as total government expenditure minus total government revenue. In order to take account of external debt positions, FORASS measures the external wealth of countries via their net foreign assets relative to GDP.

⁴ Other variables were evaluated but did not lead to a clear improvement of the model fit and were dropped to avoid multi-collinearity. Among others, these include population size, gross capital formation, government share of consumption and the labor rate.

Additionally, several variables are related to balance-of-payments positions and exchange rates that may pose constraints on crises policies and the speed of recovery. Following the method proposed in Rodrik (2009), UNVAL is an index of undervaluation where positive values indicate that the value of the currency is lower (more depreciated) than indicated by purchasing power parity. UNVAL is included because overvalued currencies might require costlier adjustments. RESRV indicates the level of reserves (excluding gold) as a share of GDP. Low level of reserves may signal vulnerability to currency crises. KAOPEN is an index on cross-border financial transactions by Chinn and Ito (2008) that takes higher values the more open the country is to cross-border capital transactions. Capital account openness may conflict with other monetary policy goals or exchange rate targets, among others. Owing to trade-offs between flexible change rates, an independent monetary policy and capital account openness (impossible trinity), the binary variable XRFLEX is included as an indicator whether countries had adopted a fixed exchange rate. FINDEV is an indicator of financial development measured as total private credit relative to GDP, based upon the notion that countries with large financial sectors are also more affected by banking crises. On the other hand, more developed financial markets signal more options of borrowing in domestic markets. In addition, three variables are included to explore the effect of banking sector regulation on the speed of recovery. FINRPR is a measure of financial repression and captures the degree of government interventions via interest rate ceilings and directed credits. SUPERV measures the quality of supervision and regulation through capital adequacy ratios, the independence of the banking supervisory agency, the existence of effective examinations and the coverage of all financial institutions. FINLIB is a summary indicator of banking sector liberalization along seven key dimensions (credit controls and reserve requirements, interest rate controls, entry barriers, state ownership, policies on securities markets, banking regulations and capital account restrictions).

Crises Policies

A third set of country-level variables refers to crises policies employed by countries, taken from Laeven and Valencia (2012). FISCST measures the direct fiscal costs of rescue packages relative to GDP. These include fiscal costs associated with bank recapitalizations but exclude asset purchases and direct liquidity assistance from the

Treasury. Liquidity support (LIQSP) is measured as the ratio of central bank claims on the financial sector to deposits and foreign liabilities. This measure also includes liquidity support extended directly by the Treasury. PKLIQ reports peak liquidity support provided by central banks measured as the highest level of central bank claims against financial institutions. The increase in public debt (DBTINC) is measured over $[T-1, T+3]$, where T is the starting year of the crisis. Monetary expansion (MONEX) is computed as the change in the monetary base between its peak during the crisis and its level one year prior to the crisis.⁵

In addition, an indicator on discretionary fiscal policy (FISPL) using a two-step procedure is constructed following Furceri and Zdzienicka (2012a), in the footsteps of Fata and Mihov (2006; 2003) and Afonso, Angelo and Furceri (2010). The share of government expenditure is estimated using the following formula:

$$FISXP_{i,t} = \alpha + \beta_1 GDP_{i,t} + \beta_2 lag(GDP)_{i,t} + \beta_3 INFL_{i,t} + \beta_4 OIL_{i,t} + \varepsilon_{i,t} ,$$

where $FISXP$ is the change in fiscal expenditure relative to GDP for country i at time t . GDP is GDP growth at time t and $lag(GDP)$ is a one-year lag of GDP growth. As in Furceri and Zdzienicka (2012a), the regression controls for inflation (INFL) and oil prices (OILPR). Inflation levels are included to ensure that the results are not driven by high inflation episodes. Oil prices control for the fact that public finances strongly depend on oil revenues in some countries. The estimated residuals ε represent the measure of discretionary fiscal policy, only containing the fiscal expenditure component that is not driven by GDP growth⁶. The indicator on discretionary fiscal

⁵ Monetary expansion is the same for all euro area countries, measured at the euro area level to reflect the common monetary policy, see Laeven and Valencia (2012: 26) for a detailed description of these crises policies.

⁶ Other than in Furceri and Zdzienicka (2012a), fiscal expenditure as a share of GDP is used rather than primary deficits, differenced variables are used rather than linear time trends and growth rather than levels of GDP are used as predictors. The results are qualitatively similar when using deficits rather than expenditure ratios, when using a time trend rather than differences and when using levels rather than growth rates.

policy responses to banking crises (FISPL) is subsequently defined as the maximum cumulative increase of fiscal expenditure to GDP while the crisis persists.

External Factors

Next to these country-level variables, regressions also test the effect of time-varying external economic conditions on the length of recovery. The federal fund rate (FFR) is used as an indicator for the monetary policy stance of the Federal Reserve Bank as the central bank of the leading global currency. On the one hand, US interest rates reflect economic conditions in the advanced economies, while on the other, they have repercussions on economies in the rest of the world via prices of new international loans (and sometimes prices for old loans, when debt contracts are linked to variable interest rates, as was the case with much of the sovereign debt contracted in the 1970s) and through their effects on the direction of international capital flows. Due to the endogenous character of the FFR, an exogenous measure of US monetary shocks (MONSHK) as developed by Romer and Romer (2004) and extended by Coibion and Gorodnichenko (2015) until 2008 is used as an alternative to the FFR. By isolating innovations to monetary policy changes that are orthogonal to the Federal Reserve information set, this series of monetary shocks is relatively free of the endogenous and anticipatory movements in the FFR. Two additional financial indicators are included, whereby the index of UK quarterly gold prices (GOLD) reflects uncertainty on financial markets. VOXBL is a volatility index based upon the Chicago Board Options Exchange (CBOE), reflecting investors' expectations for short-term volatility in the stock market. The index is taken from Bloom (2009) and extends the CBOE S&P 100 Volatility Index (VOX) to the pre-1986 period, using the same methodology. Quarterly world growth rate in real terms (WRLDTd) mainly affects the length of recovery through the size of export markets. Furthermore, quarterly crude oil prices (OILPR) possibly have an effect on the speed of recovery. These global variables are exogenously determined for most countries in the world.

The fact that (most of the) country-level variables refer to the year prior to the banking crises reduces endogeneity concerns by ensuring that country-specific variables themselves are not affected by the occurrence of a banking crisis. This does not hold for the endogenous set of crises policies employed by countries. Nonetheless, estimations for crises policies are reported to highlight correlations between certain

crises policies and paths of recovery, although they should not be interpreted as exogenous effects.

See Table 1 for summary statistics, a description of variables, coverage and sources. Imputation techniques (using the package “amelia” in the statistical software R, see Honaker et al. 2011) are used, which allow making use of the full sample despite missing values for some covariates.

[TABLE 1: DESCRIPTION OF VARIABLES]

The Model

In order to estimate the duration of recovery from banking crises and the length of post-crisis recessions, this research employs survival analysis. While mainly originally used in clinical research (e.g. estimating survival rates of individuals), survival models have since been employed in a large number of disciplines and settings where interest lies in the duration of events. In international economics, duration models have been used to study the duration of growth spells (Berg, Ostry, and Zettelmeyer 2012) or the exclusion from capital markets after creditor haircuts (Cruces and Trebesch 2013), among others. To the author’s knowledge, their application to the length of recovery from banking crises is a novelty.

A Cox proportional hazards model is used to estimate the likelihood of recovery at time t , conditional upon a number of structural and policy variables at the domestic level as well as global factors. The hazard rate $h_i(t)$ for the i -th observation (the i -th episode where pre-crisis per capita GDP has not yet been reached) can be written as

$$h_i(t) = h_0(t) \exp(\beta' \mathbf{z}_i),$$

where $h_0(t)$ is the baseline hazard function of recovery from a banking crisis at time t , \mathbf{z} is a set of covariates and β is a vector of parameters to be estimated. The Cox proportional hazards model permits the inclusion of both constant and time-varying covariates in \mathbf{z} . Moreover, it can deal with the problems of censored observations: in

this case, right-censored observations where the recovery or end of a recession period has not yet occurred, as in most of the recent banking crises. For countries that did not report any drop in their per capita GDP or no recession period, $h_i(t)$ refers to the hazard of having recovered in the first quarter of a banking crisis.

In principle, duration analysis could be undertaken using other duration models such as the parametric Weibull model or the log logistic model. The advantage of the Cox proportional hazards model with respect to alternative models is that no assumptions have to be made regarding the distribution of the parameters. The shape of $h_0(t)$ is left unparameterized and is explained by the data. Two assumptions are crucial to the model: first, the Cox proportional hazards model assumes that the effect of the covariates is proportional over the entire base line (does not depend on time); and second, interpretation of the results is based upon the assumption that explanatory variables are exogenous. While this assumption does not hold for all variables and particularly the coefficient of crises policies should be interpreted as an association and not necessarily a causal impact, exogeneity is a reasonable assumption for most of the global factors and country-specific structural conditions: Conditions such as debt levels, inflation, exchange rate regimes, etc. *prior* to the occurrence of a banking crisis are expected to have an effect on resolution policies and the duration of crises, although they are not themselves affected by the crisis⁷.

Among global variables, the federal fund rate is not only an endogenous variable in the case of the US but arguably also in the advanced economies more generally: during the recent financial crises, the main central banks of the world (the Fed, ECB, the Bank of England and the Central Bank of Japan) coordinated their policies of low

⁷ Nonetheless, selection bias may exist. For example, a later recovery in countries that suffered from a simultaneous currency crisis or sovereign debt crisis is not *necessarily* (or perhaps not only) the direct result of a twin or triple crisis; rather, it could also reflect other underlying differences of countries prone to multiple crises that have not been adequately controlled for. While possibilities of selection bias cannot be entirely ruled out in a non-experimental setting, the inclusion of control variables mitigates such concerns.

interest rates as a response to financial crises in the advanced economies. This research responds to the endogeneity of the FFR in two ways: first, the series of exogenous US monetary shocks MONSHK is used as an alternative to the FFR; and second, the effects of the FFR will only be interpreted for a subset of emerging markets and developing countries. For the latter, interest rates in the financial center are set exogenously.

IV. Results

Tables 2, 3, 4, 5 and 6 show the results from Cox proportional hazards on the length of recovery for a number of different specifications. Table 2 explores the effect of overall crises characteristics. Tables 3 to 6 summarize results for the effects of country conditions (Table 3), crises policies (Table 4) and global time-varying variables (Table 5 and 6). Missing values for all control variables have been imputed. Accordingly, no observations are lost when adding covariates, while the fact that the regressions with and without control variables are run on the same sample ensures comparability. Since uncertainty of the imputation is reflected in the standard errors, variables with many missing values (see Table 1) show larger standard errors. For the main variables of interest, only observations with information will be considered, resulting in different numbers of observations across specifications.

All models are shown for three sets of country samples, whereby the full set of banking crises covers a maximum of 138 banking crises incidents. 104 countries (= number of events) out of 138 had recovered to their pre-crisis level of per capita GDP by 2013, while 34 right-truncated countries had not (yet) reached their pre-crisis level of per capita GDP in 2013. For the purpose of comparison, all results are also reported for a subset of emerging markets and developing countries (i.e. 39 events in advanced economies are excluded) and for a subset excluding all banking crises from the global financial crises (GFC) after 2007. The latter sample excludes 27 incidents that occurred after 2007. Tables 2, 3 and 4 include fixed effects for banking crises years in all specifications. Moreover, in addition to the full set of growth and crises controls, specifications are also reported including fixed effects for six world regions.

In order to estimate the effects of time-varying variables, observations were split into quarterly units, generating a maximum of 2,336 quarterly episodes (“times at risk”)

from which hazards could be estimated for the length of recovery. All errors are clustered by country and crises years, taking account of repeated events in some countries and the clustering of events. The residuals show no signs of non-proportionality of hazards over time for the variables of interest. In the following, the main findings will be summarized for each set of predictors.

Types of Crises and Standard Growth Predictors

Table 2 shows regression results for three variables of interest that reflect the type and severity of crises: the simultaneous occurrence of a currency crisis (CURRCR) or a sovereign debt crisis (DEBTCR) and the size of peak non-performing loans (PKNPL). Coefficients and standard errors are shown for each variable alone, as well as together with standard growth predictors. Spec 7 includes the three variables jointly. Spec 8 adds regional fixed effects to the full model. Specs 9 and 10 repeat Spec 7 but exclude either advanced economies (Spec 9) or the recent GFC (Spec. 10) from the sample. Decreasing Akaike Information Criteria (AIC) and log likelihood (Log Lik) indicate that model fit improves when adding growth controls. The effect of standard growth predictors is as expected and only slightly differs across specifications, mainly due to variations in sample size. A negative coefficient sign indicates that a higher value of this variable is associated with later recovery. Hence, a higher trend GDP (GDPTRD) prior to the crisis is associated with faster recovery, while the volatility of growth (GDPVOL) only exerts a statistically significant influence in Spec 6. The hazard rates can be obtained by exponentiating the coefficients. For example, expressed in hazard rates, countries that had a one percentage point higher trend growth rate (GDPTRD) over the previous ten years are associated with a $\approx 8.3\%$ higher probability of recovery in any given year in the full model of Spec 7 ($[\exp(\approx 0.08)-1]*100$)⁸.

As would be expected from standard growth models, countries with higher levels of human capital (HUMCAP) recovered faster. Higher per capita income (INClog) is associated with later recovery. One reason for a negative coefficient for per capita income lies in the fact that per capita income captures other differences such as larger banking sectors in high-income economies, which are correlated with post-crisis

⁸ See online appendix for plots of hazard rates for the variable of interest.

performances (see below). The coefficient for trade openness (XPSH) is not statistically significant. The main interest lies in the coefficients for CURRCR, DEBTCR and PKNPL. CURRCR and DEBTCR both have the expected negative influence on recovery, although only the effect of CURRCR is statistically significant when standard growth predictors are included. PKNPL also has the expected negative sign, whereby recovery from more severe crises in terms of the size of non-performing loans lasts longer. Specs 7 to 10 include all three variables jointly together with the set of growth controls and imputations for all variables. Only CURRCR maintains a statistically significant effect, which vanishes when regional fixed effects are also included (Spec 8) or when advanced economies are excluded from the sample (Spec 10).

[TABLE 2: EFFECT OF CRISES CHARACTERISTICS ON THE LENGTH OF RECOVERY]

Country-Specific Conditions

Table 3 summarizes the results for the effect of country-specific conditions on the length of recovery. For each of the thirteen reported variables, only coefficients and standard errors for the variables of interest are reported, together with statistics of model fit (AIC, log likelihood and log likelihood chi squared). The results are provided for the model without any controls (Spec 1), the model including standard growth predictors as in Table 2 (Spec 2), the full model including growth predictors together with the three indicators on crises characteristics (Spec 3), plus a full model that also includes region fixed effects (Spec 4). Columns five and six repeat Spec 3 for the subset of emerging markets and developing countries (Spec 5) and a subset excluding the recent GFC (Spec 6). As in Table 2, missing variables have been imputed for covariates but not for the main variable of interest, resulting in different numbers of observations across models. The sign and significance of control variables are not reported due to space restrictions.

In countries with overvalued currencies (negative values of UNDVAL), recovery lasted significantly longer as soon as standard growth predictors are taken into

account. The effect also becomes stronger when crises controls – in particular the occurrence of a currency crises – are added. Increasing the value of UNDVAL by one standard deviation (≈ 0.44) results in a $\approx 54\%$ higher probability of recovery in any given year in Spec 3.⁹ This negative association between overvaluation and recovery presumably reflects high adjustment costs in countries that are characterized by large imbalances in their current accounts. The negative effect of currency overvaluation is most pronounced for the group of emerging markets and developing countries. The fact that the significance of UNDVAL vanishes when regional effects are added suggests that regional and time dummies capture much of the variation in real exchange rates; for example, overvaluation was a typical feature of the Latin American banking crises of the 1980s in contrast to the East Asian crises of the 1990s. Neither capital account openness (KAOPEN), fixed exchange rate regimes (XRFIXED) nor the level of reserves (RESRV) are associated with the speed of return to pre-crisis levels of per capita GDP.

Among the set of variables related to levels of debt and inflation, debt-to-GDP ratios (either their level, DBTGDP, or their changes over pre-crisis periods, DBTGDPd), inflation (INFL) or external debt positions (FORASS) do not show any systematic sign of correlation with the length of recovery. By contrast, the coefficient for the primary balance (PRBAL) indicates that larger budget deficits are associated with later recovery: already-large deficits prior to the outbreak of banking crises seem to be an impediment to the successful implementation of costly crises policies. The effect of PRBAL is large and robust to the inclusion of growth and crises controls but vanishes when advanced economies are excluded from the sample. Reducing primary deficits by one standard deviation (\approx five percentage points) results in a $\approx 130\%$ higher probability of recovery in any given year in Spec 3.¹⁰ None of the variables related to supervision and banking regulation (FINRPR, SUPERV and FINLIB) expose a statistically significant effect on the length of recovery. By contrast, larger financial sectors (FINDEV) are associated with later recovery, whereby increasing the

⁹ The formula is $\exp[(\approx 0.97 \cdot 0.44) - 1] \cdot 100 \approx 54$. The online appendix provides hazard plots for all tables and specifications shown in this paper.

¹⁰ The formula is $\exp[(\approx 0.16 \cdot 5.14) - 1] \cdot 100 \approx 130$.

value of FINDEV by one standard deviation (≈ 52 percentage points) results in a $\approx 52\%$ lower probability of recovery in any given year in Spec 3.¹¹ This relationship holds across different subsets and is robust to the inclusion of control variables, confirming the expectation that countries with large banking sectors are more vulnerable to the negative effects of banking sector distress.

[TABLE 3: EFFECT OF COUNTRY CONDITIONS ON THE LENGTH OF RECOVERY]

Crises Policies

Table 4 explores correlations between banking crises policies compiled by Laeven and Valencia (2012) and the length of recoveries. As in Table 3, summary results are provided for the full sample without controls (Spec 1), with basic growth controls (Spec 2) and with growth and crises controls (Spec 3). The three latter columns repeat Spec 3 for a specification including region fixed effects (Spec 4), for the subset of emerging markets and developing countries (Spec 5) and for the subset excluding all countries affected by the GFC (Spec 6).

Monetary expansion is systematically associated with later recovery. While monetary policy cushions the negative effects of banking crises in the short term, as observed by Gupta et al. (2013) and Furceri and Zdzienicka (2012a), long-lasting crises tend to be accompanied by an increase in the monetary base. As mentioned above, crises policies are potentially endogenous. The negative sign for MONEXP could thus be interpreted in a number of ways: it could reflect the negative inflationary side effects of financing bank bailouts with an increase of the money supply, although an increase of the money supply could also be an endogenous response to more severe banking crises or particularly severe financing constraints. The negative sign of MONEXP thus fits the experiences of some of the Latin American banking crises incidents of the 1980s that were followed by episodes of hyperinflation, as well as the case of the recent GFC where monetary expansion was an endogenous policy response to

¹¹ The formula is $\exp[(\approx 0.014 \times 52.61) - 1] \times 100 \approx -52$.

prolonged economic depression. In line with previous literature (Furceri and Zdzienicka 2012a; S. Gupta, Mulas-Granados, and Baldacci 2013), discretionary fiscal policy accelerates recovery from banking crises in emerging markets and developing countries. For the full sample, no clear relationship between fiscal policy and the speed of recovery is observed. As expected, larger fiscal costs of rescue packages (FISCST) are associated with later recovery, presumably signaling more dramatic banking crises. The negative coefficient for rescue costs vanishes when crises controls are included. Other indicators of crises policies – liquidity support (LIQSP, PKLIQ) and a posterior increase in debt levels (DBTINC) – show only weak signs of correlation with the length of recovery, which are not robust across specifications.

[TABLE 4: EFFECT OF CRISES POLICIES ON THE LENGTH OF RECOVERY]

External Factors

Finally, Table 5 reports summary results for six time-varying external variables: quarterly growth in world trade (WRLTRd), the log of an index of gold prices (GOLD), a measure of volatility in stock markets (VOXBL) as an indicator of uncertainty in global financial markets, the log of an index of oil prices (OILPR), the federal fund rate (FFR) and an exogenous measure of US monetary shocks (MONSHK). As in the previous tables, only summary results are shown. Next to the regressions using growth and crises controls (Specs 3 to 9), Table 5 also reports results including all external variables as controls together with standard growth predictors and crises characteristics (Specs 4, 5, 7 and 9). As for the previous tables, results are reported separately for a specification including region fixed effects (Spec. 6), a subset of emerging markets and developing countries (Specs 7 and 8) and a subset excluding the GFC (Specs 9 and 10).

Lower growth of world trade (WRLTRd) is negatively correlated with the length of recovery. Higher oil prices (OILPR) also tend to be associated with later recovery, although the effect disappears when all other external variables are also included as controls or when the sample is reduced to either emerging markets and developing countries or the pre-2007 period. The same is true for large volatility in stock markets (VOXBL) as an indicator of investors' uncertainty. Similarly, sentiments of

uncertainty in financial markets as reflected in higher prices for gold (GOLD) are associated with later recovery. On average, the federal fund rate (FFR) does not have an effect on the speed of recovery in the full sample, nor does the measure of exogenous interest rate shocks in the US (MONSHK). The fact that statistical significance for all variables vanishes when the recent global financial crisis is excluded from the sample suggests that the coefficients are largely driven by unfavorable global conditions during the slow recovery from the GFC. The coefficients on global variables also reflect clustering effects of crises episodes that negatively affect global financial variables and trade.

As mentioned above, the federal fund rate (FFR) is exogenous only for peripheral economies, whereas the major central banks of advanced economies made a coordinated effort to respond to the recent financial crisis with expansionary monetary policy. Hence, a policy of low interest rates of the FFR reflects a response to depressed economies and should be correlated with later recovery in the advanced economies, but with earlier recovery in emerging markets and developing countries due to capital inflows and more favorable financing conditions. Because interest rate policies in the financial centers are only exogenous for emerging markets and developing countries, Table 6 shows results for a subset excluding advanced economies. The interaction term of FFR with the log of per capita income (INClog) captures asymmetric exposure to interest rates in the center countries: the reliance on private capital flows is larger in middle-income countries compared to low-income countries, which receive a larger share of foreign capital in the form of grants and multilateral lending. Although the interaction term of per capita income with exogenous monetary shocks (MONSHK) has the same sign, the effect is not statistically significant in Table 6.¹²

In order to interpret the interaction term, Figure 2 simulates hazard rates for an increase of the FFR by one percentage point, conditional upon the log of per capita income, as well as with 95% and 50% confidence intervals around the point estimates. In middle-income countries above a per capita income of around 1,000 US dollars at

¹² Note that the series of MONSHK ends in 2008 and does not cover the period of recovery from the recent GFC.

constant 2005 terms, the average effect of an increase in the FFR becomes negative¹³. This observation is in line with the expectation that a higher FFR is associated with higher borrowing costs on global capital markets for peripheral countries and portfolio shifts away from emerging markets and middle-income countries. The Latin American countries that faced banking and financial crises in the 1980s following the Volcker-shock of exceptionally high interest rates in the US after 1979 fit this picture and may partly explain the long paths to recovery of Latin American countries in the 1980s.

[TABLE 5: EFFECT OF TIME-VARYING GLOBAL FACTORS ON THE
LENGTH OF RECOVERY]

[TABLE 6: EFFECTS OF GLOBAL INTEREST RATE SHOCKS ON THE
LENGTH OF RECOVERY IN EMERGING MARKETS AND DEVELOPING
COUNTRIES, CONDITIONAL ON PER CAPITA INCOME]

[FIGURE 2: SIMULATED HAZARD RATES FOR FFR, SUBSET EMERGING
MARKETS AND DEVELOPING COUNTRIES]

V. Robustness: Using the Length of Post-Crisis Recessions as an Alternative Indicator of Post-Crisis Performance

The results presented above are potentially sensitive to the choice of indicators. In particular, concerns with the length of recovery as an indicator of post-crisis performances could be related to the fact that the time it takes to reach pre-crisis levels of per capita GDP might be affected by “artificially” inflated levels of per

¹³ Based upon the Atlas method, the World Bank classified as middle-income economies those with a GNI per capita of more than 826 USD but less than 10,065 USD in 2005. See World Bank (2015).

capita GDP at the outbreak of crises due to unsustainable pre-crisis booms. Moreover, countries might still suffer from prolonged periods of low growth despite not registering drops in their per capita GDP.

In order to address the robustness of the results to the choice of the dependent variable, the duration until countries exit a recession period (RECSN) is used as an alternative indicator of post-crisis performance. Berg et al. (2012) have previously used structural break analysis based upon Bai and Perron (1998; 2003) to demarcate high growth periods. Here, the approach will be applied to an identification of recession periods. The strategy involves running an algorithm over different segmentations of a time series and identifying break dates that reduce the overall residual sum of squares (RSS)¹⁴. Recession periods are defined as periods where average yearly per capita growth lies below a growth thresholds g of 0.5 percent. The end of a recession period is marked either by an “upbreak” (the start of a growth period of at least 0.5 percent yearly growth rates) or the end of the sample (then recorded as a right-truncated entry). The indicator on the length of recession periods (RECSN) subsequently counts the number of years from the start of a banking crisis to the end of a recession period.

The criteria for choosing a threshold of 0.5% were motivated by two considerations. First, the threshold should be sufficiently low to distinguish countries with moderately low growth from true low-growth performers. In this sense, a threshold of 0.5% allows distinguishing differences between – for example – post-crisis performances of

¹⁴ An alternative (and simpler) approach would have been to simply count the years in which per-capita growth rates lie below a certain threshold. The advantage of the structural break analysis is that individual years or quarters where growth exceeds the threshold are not counted as end-of-recession periods as long as the general tendency over a longer period does not change. The R package ‘strucchange’ was used for an identification of structural break dates and for the choice of an optimal segmentation by evaluating the residual sum of squares (RSS) and the BIC for different segmentations in each of the time series. See Zeileis (2003) for an implementation of the algorithm developed by Bai and Perron (1998; 2003) in R, as well as Berg et al. (2012) for a more detailed description of the approach applied to growth periods.

the European center countries (e.g. Germany) compared to the European periphery (Portugal, Italy, Greece, Spain) during the recent GFC. Note that the threshold refers to average growth rates over a longer time span that may still include individual years with higher growth as long as the general tendency (i.e. a sustained break in growth patterns) does not change. Second, one motivation for providing an alternative indicator was that countries with no decline in GDP per capita but unsatisfactory growth performance in post-crisis years should still be counted as countries that have not yet recovered. Therefore, a positive growth threshold was chosen to emphasize a distinction with the indicator on the length of recovery. Defining the length of post-crisis recessions in this way leads to a maximum of 118 events (i.e. 118 countries that had exited a post-crisis recession by 2013) and 2,329 times-at-risk.

Figure 3 plots time to recovery against the length of post-crisis recessions for a subset of banking crises incidents since 1970. On average, countries that recovered later to pre-crisis levels of per capita income also tended to suffer from longer recession periods. On the other hand, several countries entered long post-crisis recession periods despite only moderate or no drops in per capita GDP.

[FIGURE 3: LENGTH OF RECOVERY AND DURATION OF POST-CRISIS RECESSION]

Tables 7 to 11 repeat the previous empirical exercise, using the length of post-crisis recessions as a dependent variable rather than the recovery to pre-crisis levels of per capita GDP. Analogous to Tables 2-6, the results are shown for basic growth predictors and crises characteristics (Table 7), country conditions (Table 8), crises policies (Table 9) and external factors (Tables 10 and 11). As previously, Tables 7 to 10 also provide results for subsets excluding advanced economies and excluding countries affected by the recent GFC.

Whether countries suffered simultaneous debt or currency crises is not a good predictor for the length of post-crisis recessions (Table 7). The peak share of non-performing loans (PKNPL) has a statistically significant effect, albeit only when growth controls are not included (Spec 5). As in Table 2, the level of human capital (HUMCAP) and trend growth rates (GDPTRD) are important predictors for post-

crisis performances. While a history of high growth volatility (GDPVOL) is not related to the speed of recovery in Table 2, it increases the probability of an earlier exit from recession periods. Per capita income (INClog) and trade openness (XPSH) are not significantly different from zero in any of the specifications.

Results on country conditions (Table 8) demonstrate similar patterns as Table 3. Exchange rate overvaluation is associated with longer recession periods. Compared to Table 2, the negative effect of UNDVAL is even larger and significant in all specification (except Spec 4 with region fixed effects). Similar to Table 3, the size of banking sectors (FINDEV) has a negative effect on the length of post-crisis recessions. This effect vanishes when advanced economies with typically larger banking sectors are excluded from the sample. As in the case of recovery, large primary balances tend to be associated with longer recession periods in the full sample.¹⁵

Capital account openness (KAOPEN), exchange rate regimes (XRFIXED) and the level of foreign reserves (RESRV) do not expose robust patterns. Higher debt levels (DBTGDP) and stronger debt increases (DBTGDPd) previous to banking crises are associated with longer recessions periods, albeit only when other variables are not accounted for. Higher levels of foreign debt (FORASS) are associated with longer recessions periods, albeit only when region fixed effects are included. A history of high inflation does not contribute to longer recession periods. By contrast, Specs 3 and 6 even point to a *negative* effect of low inflation in some specification, reflecting a result driven by countries that suffered from deflationary periods previous to the outbreak of banking crises.¹⁶ Countries with stricter supervision of banking sectors

¹⁵ For several specifications, data matrices did not have a solution, due to a low number of events relative to the number of predictors, i.e. Specs 2 and 3 in Table 9 for the variable PRBAL as well as several specifications for crises policies in Table 10. For the purpose of comparability, specifications were not changed and the results are only reported for specifications with a solution.

¹⁶ The association between higher inflation rates and earlier exit from recession periods in some specifications is observable for different pre-crisis period lengths and

suffered shorter recession periods in the period up to 2007 (Spec. 6). Interestingly, the same is true for more repressed banking sectors (FINRPR).

With respect to crises policies (Table 9), the findings slightly differ from those presented in Table 4: the coefficients for monetary expansion points to the same negative correlation with post-crisis performance, but is only significantly different from zero in Spec. 4. An increase in debt after crises (DBTINC) is correlated with longer recession periods in the full sample, at least as long as region fixed effects are not included. This indicates that low growth periods may often go hand-in-hand with debt increases. As emphasized above, crises policies are endogenous and do not necessarily indicate a causal relationship.

Finally, most external variables in Table 10 mirror the picture drawn in Table 5 in the previous section. Indicators of uncertainty in global financial markets – gold prices (GOLD) and stock market volatility (VOXBL) – are associated with longer post-crisis recession periods. Moreover, high oil prices (OILPR) tend to have a negative influence on the length of recessions, although the effect does not hold when other external factors are also controlled for. Other than in Table 5, a lower growth in world trade (WRLTRd) only has a negative effect on recessions for the subset of emerging markets and developing countries, as well as only when other external factors are not controlled for. Global interest rate shocks – measured as either the federal fund rate FFR or the exogenous series of US monetary shocks MONSHK – do not exhibit a statistically significant relationship with the length of post-crisis recessions on average in the full sample.

Finally, Table 11 explores the effect of global interest rate shocks on the length of recessions in the subset of emerging markets and developing countries, conditional on per capita income. Interactions of per capita income with either the FFR or exogenous monetary shocks (MONSHK) support the message from Table 6, namely that global

for a measurement in logs as well as levels, although it disappears when eight incidents with negative inflation rates in the pre-crisis year are excluded.

interest rate shocks have a negative effect on post-crisis performances, whereby this effect is most harmful for middle-income countries.¹⁷

[TABLES 7 to 11]

VI. Conclusion

This paper has investigated crises characteristics, country-specific conditions, crises policies and exogenous global factors as potential drivers of the length of recovery from banking crises (i.e. the time that it takes to reach pre-crisis levels of per capita GDP) using Cox proportional hazards. The robustness of the results was also tested using the length of post-crisis recession periods as an alternative dependent variable.

Several findings emerge from this exploratory paper. First, regarding domestic factors, the occurrence of a simultaneous currency crisis postpones recovery. Second, large banking sectors are robustly correlated with later recovery and longer post-crisis recessions. Third, countries with overvalued currencies tend to experience later recovery and longer recession periods. Fourth, while large primary deficits have a negative effect on the length of recovery and post-crisis recessions, the same is not true for higher debt-to-GDP ratios or higher inflation rates. Among crises policies, monetary expansion demonstrated a strong negative correlation with the length of recovery and post-crisis recessions. However, due to the endogeneity of crises policies, this should be interpreted as a sign of correlation rather than causation.

In addition to these domestic variables, low growth in world trade is associated with later recovery, whereas uncertainty in global financial markets as measured by either the price of gold or an indicator of stock market volatility is associated with both later recovery and longer recession periods. This relationship supports the expectation that periods of uncertainty in global financial markets are accompanied by flights to safe assets such as gold and a low willingness to invest in risky assets. The particular vulnerability of middle-income countries to external factors is reflected in the conditional effects of global interest rates, whereby a high FFR translates into larger

¹⁷ See online appendix for a graphical representation.

borrowing costs on global capital markets and has an influence on the direction of international capital flows. Empirically, global interest rate shocks are associated with later recovery and longer recession periods in middle-income countries with a strong reliance on external finance.

The empirical analysis based upon more than 40 years of banking crises history also bears relevant lessons for the most recent series of banking crises in the advanced economies. Countries affected by the recent GFC are facing a number of unfavorable conditions at both the domestic and external level. The negative effect of large banking sectors is empirically in line with the relatively slow recovery from the recent series of banking crises hitting economies with inflated financial sectors.

Furthermore, the negative effect of overvalued currencies may partly explain recent experiences: the more sluggish post-crisis performance of the European periphery compared to the countries of the European center was preceded by a relative overvaluation of real exchange rates at the European periphery (and – as members of the Euro – a lack of mechanisms to adjust the value of their currency). Regarding external factors, a high degree of uncertainty in financial markets and a low growth in world trade – among others – are additional external factors that hinder quick recoveries from the ongoing crises. In fact, the negative association between unfavorable external factors and the length of recovery is largely driven by experiences from the recent GFC.

The question of how exactly structural constraints translate to resolution tools and growth policies as well as how policy responses to banking crises affect outcomes and the distribution of costs warrants further investigation. The results from this research highlight that the combination of external and domestic constraints has important effects on recovery, whereby crises policies and their effectiveness may thus strongly differ across cases.

VII. Literature

Abbas, Ali, Nazim Belhocine, Asmaa ElGanainy, and Mark Horton. 2010. “A Historical Public Debt Database.” IMF Working Paper 10/245.

Abiad, Abdul, Enrica Detragiache, and Thierry Tresselt. 2008. *A New Database of Financial Reforms*. IMF Working Paper 08/266.

- Afonso, António, Luca Agnello, and Davide Furceri. 2010. "Fiscal Policy Responsiveness, Persistence, and Discretion." *Public Choice* 145 (3–4): 503–30. doi:10.1007/s11127-009-9577-x.
- Angkinand, Apanard P. 2009. "Banking Regulation and the Output Cost of Banking Crises." *Journal of International Financial Markets, Institutions and Money* 19 (2): 240–257.
- Bai, Jushan, and Pierre Perron. 1998. "Estimating and Testing Linear Models with Multiple Structural Changes." *Econometrica* 66 (1): 47. doi:10.2307/2998540.
- . 2003. "Computation and Analysis of Multiple Structural Change Models." *Journal of Applied Econometrics* 18 (1): 1–22. doi:10.1002/jae.659.
- Barro, Robert J., and Jong-Wha Lee. 2001. "International Data on Educational Attainment: Updates and Implications." *Oxford Economic Papers* 53 (3): 541–63. doi:10.1093/oep/53.3.541.
- Beck, Thorsten, Asli Demirgüç-Kunt, and Ross Levine. 2000. "A New Database on the Structure and Development of the Financial Sector." *The World Bank Economic Review* 14 (3): 597–605.
- Berg, Andrew, Jonathan D. Ostry, and Jeromin Zettelmeyer. 2012. "What Makes Growth Sustained?" *Journal of Development Economics* 98 (2): 149–66. doi:10.1016/j.jdeveco.2011.08.002.
- Bloom, Nicholas. 2009. "The Impact of Uncertainty Shocks." *Econometrica* 77 (3): 623–85. doi:10.3982/ECTA6248.
- Boyd, John H., Sungkyu Kwak, and Bruce Smith. 2005. "The Real Output Losses Associated with Modern Banking Crises." *Journal of Money, Credit and Banking*, 977–999.
- Calomiris, Charles W., Daniela Klingebiel, and Luc Laeven. 2005. "Financial Crisis Policies and Resolution Mechanisms: A Taxonomy from Cross-Country Experience." In *Systemic Financial Distress: Containment and Resolution*, edited by Patrick Honohan and Luc Laeven, 25–75. Cambridge: Cambridge University Press.
<http://ebooks.cambridge.org/ref/id/CBO9780511528521A012>.

- Cerra, Valerie, and Sweta Chaman Saxena. 2008. "Growth Dynamics: The Myth of Economic Recovery." *American Economic Review* 98 (1): 439–57.
doi:10.1257/aer.98.1.439.
- Chinn, Menzie D., and Hiro Ito. 2008. "A New Measure of Financial Openness." *Journal of Comparative Policy Analysis* 10 (3): 309–322.
- Claessens, Stijn, Ceyla Pazarbasioglu, Luc Laeven, Marc Dobler, Fabian Valencia, Oana Nedelescu, and Katharine Seal. 2012. *Crisis Management and Resolution: Early Lessons from the Financial Crisis*. IMF Staff Discussion Notes No 11/05. August. <http://imf-ideo.org/external/np/seminars/eng/2012/fincrisis/pdf/ch16.pdf>.
- Coibion, Olivier, and Yuriy Gorodnichenko. 2015. "Is the Phillips Curve Alive and Well after All? Inflation Expectations and the Missing Disinflation." *American Economic Journal: Macroeconomics* 7 (1): 197–232.
doi:10.1257/mac.20130306.
- Cruces, Juan J, and Christoph Trebesch. 2013. "Sovereign Defaults: The Price of Haircuts." *American Economic Journal: Macroeconomics* 5 (3): 85–117.
doi:10.1257/mac.5.3.85.
- Dell’Ariccia, Giovanni, Enrica Detragiache, and Raghuram Rajan. 2008. "The Real Effect of Banking Crises." *Journal of Financial Intermediation* 17 (1): 89–112.
- Demirgüç-Kunt, Asli, Enrica Detragiache, and Poonam Gupta. 2006. "Inside the Crisis: An Empirical Analysis of Banking Systems in Distress." *Journal of International Money and Finance* 25 (5): 702–18.
doi:10.1016/j.jimonfin.2006.04.004.
- Fatás, Antonio, and Ilian Mihov. 2003. "The Case for Restricting Fiscal Policy Discretion." *The Quarterly Journal of Economics* 118 (4): 1419–47.
doi:10.1162/003355303322552838.
- . 2006. "The Macroeconomic Effects of Fiscal Rules in the US States." *Journal of Public Economics* 90 (1–2): 101–17.
doi:10.1016/j.jpubeco.2005.02.005.

- Federal Reserve Board. 2015. "Effective Federal Funds Rate." Federal Reserve Bank of St. Louis.
<https://research.stlouisfed.org/fred2/series/FEDFUNDS/downloaddata>.
- Furceri, Davide, and Aleksandra Zdzienicka. 2012a. "Banking Crises and Short and Medium Term Output Losses in Emerging and Developing Countries: The Role of Structural and Policy Variables." *World Development* 40 (12): 2369–2378.
- . 2012b. "How Costly Are Debt Crises?" *Journal of International Money and Finance* 31 (4): 726–42. doi:10.1016/j.jimonfin.2012.01.012.
- . 2012c. "The Consequences of Banking Crises for Public Debt." *International Finance* 15 (3): 289–307. doi:10.1111/j.1468-2362.2013.12003.x.
- Gandrud, Christopher. 2015. "simPH: An R Package for Illustrating Estimates from Cox Proportional Hazard Models Including for Interactive and Nonlinear Effects." *Journal of Statistical Software*, 65 (3): 1–20.
- Grossman, E., and C. Woll. 2014. "Saving the Banks: The Political Economy of Bailouts." *Comparative Political Studies* 47 (4): 574–600.
doi:10.1177/0010414013488540.
- Gupta, Poonam. 2005. "Aftermath of Banking Crises: Effects on Real and Monetary Variables." *Journal of International Money and Finance* 24 (4): 675–91.
doi:10.1016/j.jimonfin.2005.03.001.
- Gupta, Sanjeev, Carlos Mulas-Granados, and Emanuele Baldacci. 2013. "How Effective Is Fiscal Policy Response in Systemic Banking Crises?" In *Financial Crises: Causes, Consequences, and Policy Responses*, Stijn Claessens, M. Ayhan Kose, Luc Laeven, and Fabián Valencia, 431–58. International Monetary Fund.
- Haber, Stephen. 2005. "Mexico's Experiments with Bank Privatization and Liberalization, 1991–2003." *Journal of Banking & Finance* 29 (8–9): 2325–53. doi:10.1016/j.jbankfin.2005.03.017.
- Hausmann, Ricardo, and Liliana Rojas-Suárez. 1996. *Banking Crises in Latin America*. Inter-American Development Bank.

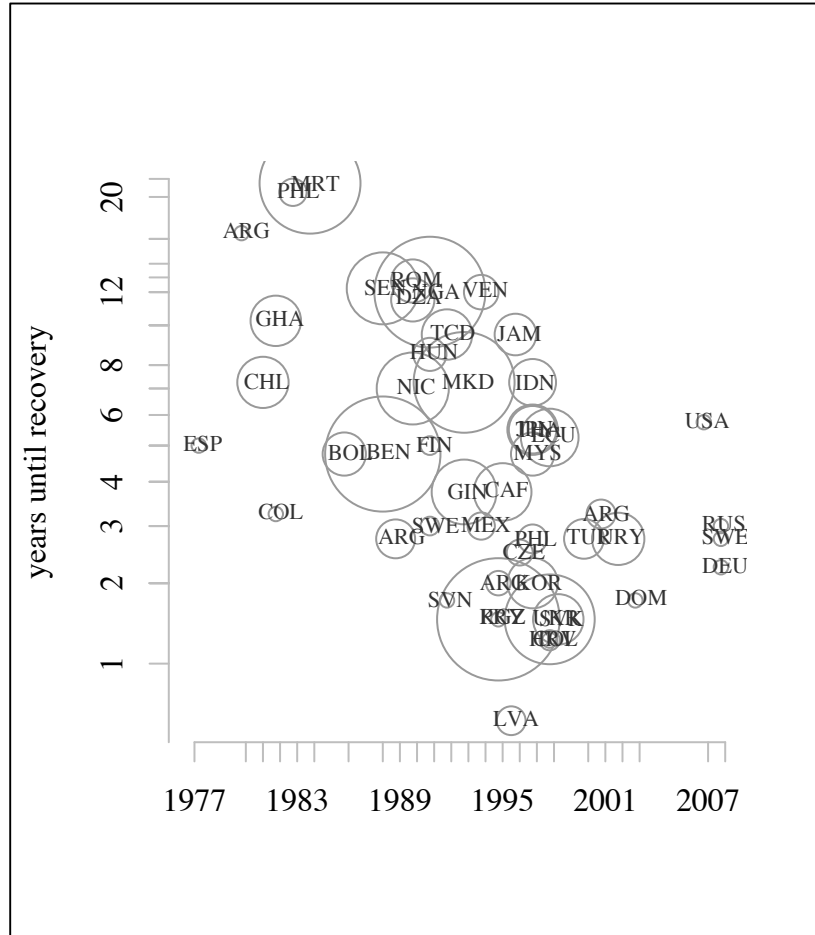
- Hoggarth, Glenn, Ricardo Reis, and Victoria Saporta. 2002. "Costs of Banking System Instability: Some Empirical Evidence." *Journal of Banking & Finance* 26 (5): 825–55. doi:10.1016/S0378-4266(01)00268-0.
- Honaker, James, Gary King, Matthew Blackwell, and others. 2011. "Amelia II: A Program for Missing Data." *Journal of Statistical Software* 45 (7): 1–47.
- Hutchison, Michael M., and Ilan Noy. 2005. "How Bad Are Twins? Output Costs of Currency and Banking Crises." *Journal of Money, Credit and Banking*, 725–752.
- Hutchison, Michael, and Kathleen McDill. 1999. "Are All Banking Crises Alike? The Japanese Experience in International Comparison." *Journal of the Japanese and International Economies* 13 (3): 155–180.
- Ilzetzki, Ethan, Carmen Reinhart, and Kenneth Rogoff. 2011. "The Country Chronologies and Background Material to Exchange Rate Arrangements into the 21st Century: Will the Anchor Currency Hold." Working Paper. http://personal.lse.ac.uk/ilzetzki/data/ERA-Country_Chronologies_2011.pdf.
- Ingves, Stefan, and Göran Lind. 1996. "The Management of the Bank Crisis in Retrospect." *Quarterly Review Sveriges Riksbank*, 5–18.
- Jonung, Lars. 2009. "The Swedish Model for Resolving the Banking Crisis of 1991–93. Seven Reasons Why It Was Successful." Directorate General Economic and Monetary Affairs (DG ECFIN), European Commission. <http://ideas.repec.org/p/euf/ecopap/0360.html>.
- Jordá, Óscar, Moritz Schularick, and Alan M. Taylor. 2013. "When Credit Bites Back." *Journal of Money, Credit and Banking* 45 (s2): 3–28. doi:10.1111/jmcb.12069.
- . 2016. "The Great Mortgaging: Housing Finance, Crises and Business Cycles." *Economic Policy* 31 (85): 107–52. doi:10.1093/epolic/eiv017.
- Kanaya, Akihiro, and David Woo. 2000. "The Japanese Banking Crisis of the 1990s: Sources and Lessons." IMF Working Paper WP/00/7. IMF.
- Kroszner, Randall S., Luc Laeven, and Daniela Klingebiel. 2007. "Banking Crises, Financial Dependence, and Growth." *Journal of Financial Economics* 84 (1): 187–228.

- Krueger, Anne, and Aaron Tornell. 1999. "The Role of Bank Restructuring in Recovering from Crises: Mexico 1995-98." National Bureau of Economic Research. <http://www.nber.org/papers/w7042>.
- Laeven, Luc, and Fabian Valencia. 2012. "Systemic Banking Crises Database: An Update," IMF working paper 12/163, .
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2096234.
- Lane, Philip R., and Gian Maria Milesi-Ferretti. 2007. "The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970–2004." *Journal of International Economics* 73 (2): 223–50. doi:10.1016/j.jinteco.2007.02.003.
- Marshall, Monty G., and Keith Jagers. 2002. "Polity IV Project: Political Regime Characteristics and Transitions, 1800-2002."
<http://www.citeulike.org/group/582/article/369537>.
- Reinhart, Carmen M., and Kenneth S. Rogoff. 2009. "The Aftermath of Financial Crises." National Bureau of Economic Research.
<http://www.nber.org/papers/w14656>.
- . 2013. "Banking Crises: An Equal Opportunity Menace." *Journal of Banking & Finance* 37 (11): 4557–73. doi:10.1016/j.jbankfin.2013.03.005.
- . 2014. "Recovery from Financial Crises: Evidence from 100 Episodes." *American Economic Review* 104 (5): 50–55. doi:10.1257/aer.104.5.50.
- Rodrik, Dani. 2009. "The Real Exchange Rate and Economic Growth." *Brookings Papers on Economic Activity* 2008 (2): 365–412. doi:10.1353/eca.0.0020.
- Rojas-Suárez, Liliana, and Steven Weisbrod. 1996. "Managing Banking Crises in Latin America: The Do's and Don'ts of Successful Bank Restructuring Programs." *Inter-American Development Bank, Working Paper Series* 263.
- Romer, Christina D, and David H Romer. 2004. "A New Measure of Monetary Shocks: Derivation and Implications." *American Economic Review* 94 (4): 1055–84. doi:10.1257/0002828042002651.
- Rosas, Guillermo. 2006. "Bagehot or Bailout? An Analysis of Government Responses to Banking Crises." *American Journal of Political Science* 50 (1): 175–191.

- Schularick, Moritz. 2012. "Public Debt and Financial Crises in the Twentieth Century." *European Review of History* 19 (6): 881–897.
- Serwa, Dobromił. 2010. "Larger Crises Cost More: Impact of Banking Sector Instability on Output Growth." *Journal of International Money and Finance* 29 (8): 1463–81. doi:10.1016/j.jimonfin.2010.05.011.
- Standard & Poors. 2014. "Sovereign Rating And Country T&C Assessment Histories."
- World Bank. 2015. "How Does the World Bank Classify Countries?" <https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries>.
- Zeileis, Achim, Christian Kleiber, Walter Krämer, and Kurt Hornik. 2003. "Testing and Dating of Structural Changes in Practice." *Computational Statistics & Data Analysis* 44 (1–2): 109–23. doi:10.1016/S0167-9473(03)00030-6.

VIII. Tables and Figures

Figure 1: Length of Recoveries from Banking Crises



The figure plots the duration of recovery from banking crises (i.e. the time that it takes to reach pre-crisis levels of per capita GDP) on a time-line for a sub-sample of banking crises. The size of circles is drawn proportional to the share of peak non-performing loans (PKNPL). The Y-axis is scaled in logs for better representation.

Table 1: Data Description

Variable Name	Description	Coverage incidents	Mean [s.e.]	VIF
RECOV	Duration of recovery (in years, by quarters) ^{a), b)}	138	4.88 [0.50]	
RECSN	Length of post-crisis recession, defined as a structural upbreak followed by a growth period with mean per capita growth rates above one percent ^{a), b)}	138	4.22 [0.34]	
A) TYPE OF CRISES AND GROWTH CONTROLS				
<i>i) crisis characteristics</i>				
CURRCR	Binary indicator whether a currency crisis occurred in the year of or previous year of the banking crisis ^{e)}	138	.24 [.04]	1.42
DEBTCR	Binary indicator whether a sovereign debt crisis occurred in the year of or previous year of the banking crisis ^{g)}	138	.14 [.03]	1.37
PKNPL	Peak share of non-performing loans during crises ^{e)}	101	27.14 [1.99]	2.23
<i>ii) growth histories</i>				
GDPTRD	Trend GDP measured as average growth rate over the previous ten years ^{a)}	137	2.02 [.35]	1.27
GDPVOL	Volatility of growth measured as standard deviation of the growth rate over the previous 10 years ^{a)}	137	5.22 [.39]	1.34
<i>iii) standard growth predictors</i>				
HUMCAP	Average years of schooling of the adult population ^{d)}	122	6.94 [.28]	4.66
INClog	Log of per capita GDP in 2005 USD [NY.GDP.PCAP.KD] ^{a)}	135	7.85 [.14]	4.31
XPSH	Merchandise trade relative to GDP [[TG.VAL.TOTL.GD.ZS] ^{a)}	137	3.33 [.19]	1.27
B) COUNTRY CONDITIONS				
<i>i) balance of payments and the exchange rate</i>				
KAOPEN	Index on cross-border financial transactions between 0 and 1, taking higher values the more open the country is to cross-border capital transactions ^{k)}	131	.42 [.03]	1.59
UNDVAL	Index of undervaluation centered around zero, following Rodrik (2008). Values of RER larger than one indicate that the value of the currency is lower (more depreciated) than indicated by purchasing power parity ^{c)}	131	.06 [.04]	1.94
XRFIXED	Binary indicator whether countries had adopted a fixed exchange rate ^{l)}	130	.33 [.04]	1.53
RESRV	Level of reserve excluding gold as a share of GDP [FI.RES.XGLD.CD] ^{a)}	136	.11 [.01]	1.56
<i>ii) debt and inflation</i>				
DBTGDP	Level of public debt relative to GDP ^{f)}	131	74.06 [5.95]	2.01
DBTGDPd	Average annual change in DBTGDP over the previous five years ^{f)}	131	1.28 [.69]	1.36
PRBAL	Primary balance, defined as total government expenditure minus total government revenue, as a share of GDP ^{a)}	76	-4.68 [0.49]	1.46
FORASS	Net foreign assets as a share of GDP ^{l)}	134	-.66 [.16]	1.79
INFL	Log of average consumer prices inflation (annual %) ^{a)}	118	95.73 [31.54]	1.20
<i>iii) financial development, supervision and regulation</i>				
FINDEV	Private bank credit relative to GDP [pcrdbgdp] ^{h)}	114	48.17 [5.00]	2.53

FINRPR	Financial repression indicator. Combined scores on reserve requirements, mandatory credit allocation, and credit subsidies. Normalized to a scale between 0 (=fully repressed banking sector) and 3 (=fully liberalized) [creditcontrols] ^{r)}	102	1.68 [0.10]	3.49
SUPERV	Banking supervision indicator. Combined scores on capital adequacy ratios, independence of the banking supervisory agency, existence of effective on-site and off-site examinations, and coverage of financial institutions. Normalized to a scale between 0 (=unregulated) and 3 (=highly regulated) [bankingsuperv] ^{r)}	102	0.88 [0.11]	2.40
FINLIB	Financial liberalization indicator along seven reform dimensions (credit controls and reserve requirements, interest rate controls, entry barriers, state ownership, policies on securities markets, banking regulations, capital account restrictions). Scores are combined and normalized between zero and one [finreform_n] ^{r)}	102	0.53 [0.03]	3.49
C) CRISES POLICIES				
FISCST	Direct fiscal costs of rescue packages relative to GDP ^{e)}	57	12.61 [1.46]	1.78
LIQSP	Liquidity support provided by central banks or the Treasury, as ratio of deposits and foreign liabilities ^{e)}	96	17.08 [2.14]	1.35
PKLIQ	Peak liquidity support measured as the highest level of central bank claims against financial institutions ^{e)}	102	2.19 [0.69]	1.53
DBTINC	Increase in public debt, measured over [T-1, T+3], where T is the starting year of the crisis ^{e)}	91	9.21 [3.58]	1.40
MONEX	Monetary expansion, measures as the change in the monetary base between crisis peak and its level in [T-1] ^{e)}	84	32.13 [3.76]	1.25
FISPL	Discretionary fiscal policy, containing the fiscal expenditure component only that is not driven by GDP growth. Defined as the max. cumulative increase of fiscal expenditure to GDP while the crisis lasts. See text for details and references ^{p)}	63	2.94 [0.63]	2.20
D) EXTERNAL CONDITIONS				
FFR	US Federal Fund Rate. Quarterly average ^{m)}	138	4.66 [0.06]	1.18
MONSHK	Series of exogenous US monetary shocks isolating innovations to monetary policy changes that are orthogonal to the Federal Reserve information set ^{q)}	138	0.04 [0.01]	1.04
WRLDTd	Quarterly growth in world trade [TXG], seasonally adjusted ^{b)}	138	1.40 [0.10]	1.48
VOXBL	Extension of the CBOE S&P 100 Volatility Index (VOX) to the pre-1986 period. Based upon the Chicago Board Options Exchange (CBOE), reflecting investors' expectations for short-term volatility in the stock market ⁿ⁾	138	2146 [17.23]	1.42
GOLD	Log of an index of UK quarterly gold prices (2010=100) [PZPIGOLD] ^{b)}	138	3.60 [0.01]	2.67
OILPR	Log of an index of quarterly crude oil prices (2010=100) [PZPIOIL] ^{b)}	138	3.55 [0.01]	2.66

Sources: ^{a)}World Development Indicators, ^{b)}IMF International Financial Statistics, ^{c)}Penn World Tables 8.0, ^{d)}Barro and Lee (2001), ^{e)}Laeven and Valencia (2012), ^{f)}Abbas et al. (2010), ^{g)}Furceri and Zdzienicka (2012b) ^{h)}Beck, Demirgüç-Kunt, and Levine (2000), ⁱ⁾Lane and Milesi-Ferretti (2007) ^{k)}Chinn and Ito (2008), ^{l)}Ilzetzki, Reinhart, and Rogoff (2011) ^{m)}Federal Reserve Board (2015), ⁿ⁾Bloom (2009), ^{o)}Marshall and Jagers (2002), ^{p)}IMF World Economic Outlook ^{q)}based upon Romer and Romer (2004) and extended by Coibion and Gordnichenko (2015) ^{r)}Abiad et al (2008). Names of data series in the original source are given in brackets. All variables except A-i, C and D are measured before occurrence of the banking crisis. Mean values and s.e. refer to a maximum of 138 crises incidents at time t=0, except for the time-varying external factors where mean and s.e. are measured over a maximum 2,336 times-at-risk. As a measure of multicollinearity, Table 1 also reports variance inflation factors (VIF) for each predictor variable with the set of growth and crises controls. VIF below 5 for all predictor variables indicates only moderate levels of collinearity.

Table 2: Effect of Crises Characteristics and Basic Growth Predictors on the Length of Recovery

sample	Spec. 1	Spec. 2	Spec. 3	Spec. 4	Spec. 5	Spec. 6	Spec. 7	Spec. 8	Spec. 9	Spec. 10
	full set								subset EMDC	subset pre-2007
#events	110		110		76		110		89	104
times-at-risk	2696		2696		2055		2696		2057	2247
#parameters	28	33	28	33	26	31	35	41	32	32
year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
region fixed effects	no	no	no	no	no	no	no	yes	no	no
AIC	910.74	904.99	911.57	907.96	570.44	562.72	903.76	907.52	693.36	831.02
Log Lik	-427.37	-419.5	-427.78	-420.98	-259.22	-250.36	-416.88	-412.76	-314.68	-383.51
LR chisq	57.12	72.87	56.29	69.9	65.17	82.89	78.1	86.34	47.85	49.01
CURRCR	-0.559 ** [0.2693]	-0.6262 ** [0.2851]					-0.5889 * [0.3221]	-0.506 [0.3469]	-0.6802 * [0.3566]	-0.5264 [0.3368]
DEBTCT			-0.6393 * [0.3477]	-0.5635 [0.3513]			-0.232 [0.3993]	-0.4809 [0.4297]	-0.4144 [0.4172]	-0.3076 [0.4092]
PKNPL					-0.0342 *** [0.0112]	-0.0241 ** [0.0122]	-0.0129 [0.0104]	-0.0071 [0.0103]	-0.0098 [0.0111]	-0.0129 [0.0104]
GDPTRD		0.0958 *** [0.036]		0.093 *** [0.0354]		0.0694 [0.0572]	0.0806 ** [0.0389]	0.0975 ** [0.0464]	0.0571 [0.0399]	0.0732 * [0.0392]
GDPVOL		0.0116 [0.0373]		-0.0006 [0.0334]		-0.1332 * [0.0685]	0.0264 [0.0363]	0.0234 [0.0394]	0.042 [0.0384]	0.0251 [0.0371]
HUMCAP		0.2202 *** [0.0846]		0.1957 ** [0.0848]		0.3795 *** [0.107]	0.2072 ** [0.0846]	0.137 [0.0948]	0.1169 [0.0967]	0.1729 ** [0.0854]
INClog		-0.2955 * [0.1719]		-0.2211 [0.1685]		-0.5463 *** [0.1889]	-0.3307 * [0.1795]	-0.3275 [0.2137]	-0.352 [0.2331]	-0.2568 [0.177]
XPSH		-0.0253 [0.0646]		-0.0445 [0.0631]		-0.0481 [0.0806]	-0.0147 [0.0638]	-0.0141 [0.0714]	0.0474 [0.0869]	0.0016 [0.067]

The table shows coefficients of a Cox proportional hazards model for quarterly years until pre-crisis per capita GDP is reached. A negative coefficient sign indicates that higher values of that variable are associated with longer duration of recovery. Stars denote significance at the 1% (***), 5% (**) and 10%(*) levels. Coefficients are averaged after running the regression on 50 imputed datasets following the method proposed in Honaker et al. (2011). Standard errors are adjusted accordingly and reflect uncertainty that arises from missing values. See text for details.

Table 3: The Effect of Country Conditions on the Length of Recovery

<i>sample</i>	<i>Spec. 1</i>	<i>Spec. 2</i>	<i>Spec. 3</i>	<i>Spec. 4</i>	<i>Spec. 5</i>	<i>Spec. 6</i>
	<i>full sample</i>				<i>subset EMDC</i>	<i>subset pre-2007</i>
<i>year fixed effects</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>growth controls</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>crisis controls</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>region fixed effects</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>no</i>	<i>no</i>
<i>#parameters</i>	28	33	36	42	33	33
<i>balance of payments and the exchange rate</i>						
KAOPEN	-0.2726	-0.2317	-0.3386	-0.422	-0.4137	-0.3726
	<i>[0.4339]</i>	<i>[0.4643]</i>	<i>[0.4747]</i>	<i>[0.573]</i>	<i>[0.6295]</i>	<i>[0.4901]</i>
<i>times-at-risk</i>	2545	2545	2545	2545	1934	2117
<i>#events</i>	105	105	105	105	85	99
<i>AIC</i>	861.65	857.47	852.59	854.42	655.89	779.87
<i>Log Lik</i>	-402.83	-395.73	-390.3	-385.21	-294.95	-356.93
<i>LR chisq</i>	50.69	64.87	75.75	85.92	45.21	49.21
UNDVAL	0.425	0.5701 *	0.9722 **	0.3936	1.346 ***	0.9217 **
	<i>[0.2699]</i>	<i>[0.3404]</i>	<i>[0.3803]</i>	<i>[0.4718]</i>	<i>[0.4343]</i>	<i>[0.3777]</i>
<i>times-at-risk</i>	2494	2494	2494	2494	1855	2045
<i>#events</i>	104	104	104	104	83	98
<i>AIC</i>	850.9	843.72	832.97	836	623.9	761.54
<i>Log Lik</i>	-397.45	-388.86	-380.49	-376	-278.95	-347.77
<i>LR chisq</i>	56.63	73.8	90.55	99.53	60.47	59.54
XRFIXED	-0.2647	0.1559	-0.0405	-0.0564	0.0663	0.1119
	<i>[0.3072]</i>	<i>[0.3293]</i>	<i>[0.3402]</i>	<i>[0.3333]</i>	<i>[0.3871]</i>	<i>[0.3527]</i>
<i>times-at-risk</i>	2688	2688	2688	2688	2049	2239
<i>#events</i>	102	102	102	102	81	96
<i>AIC</i>	838.65	829.15	826.63	829.92	622.02	754.14
<i>Log Lik</i>	-391.33	-381.58	-377.32	-372.96	-278.01	-344.07
<i>LR chisq</i>	50.78	70.28	78.8	87.52	48.25	52.76
RESRV	1.2138	1.6161	1.1129	0.6111	0.2476	0.3818
	<i>[1.0542]</i>	<i>[1.827]</i>	<i>[1.9182]</i>	<i>[2.1549]</i>	<i>[2.3984]</i>	<i>[2.1693]</i>
<i>times-at-risk</i>	2609	2609	2609	2609	1970	2160
<i>#events</i>	109	109	109	109	88	103
<i>AIC</i>	900.93	895.73	892.14	895.14	684.82	818.75
<i>Log Lik</i>	-422.46	-414.86	-410.07	-405.57	-309.41	-376.37
<i>LR chisq</i>	51.58	66.78	76.37	85.37	43.56	47.9
<i>debt and inflation</i>						
FORASS	0.0278	-0.0166	-0.0378	-0.075	-0.0421	-0.0473
	<i>[0.06]</i>	<i>[0.076]</i>	<i>[0.0737]</i>	<i>[0.083]</i>	<i>[0.0784]</i>	<i>[0.0736]</i>
<i>times-at-risk</i>	2607	2607	2607	2607	1968	2158
<i>#events</i>	107	107	107	107	86	101
<i>AIC</i>	882.06	876.1	871.71	873.49	664.9	798.25
<i>Log Lik</i>	-413.03	-405.05	-399.86	-394.74	-299.45	-366.13
<i>LR chisq</i>	50.81	66.77	77.16	87.38	45.21	49.57
DBTGDP	-0.0012	-0.0006	0.0009	0.0015	0.0015	0.0008
	<i>[0.0018]</i>	<i>[0.0019]</i>	<i>[0.0018]</i>	<i>[0.0021]</i>	<i>[0.002]</i>	<i>[0.0018]</i>
<i>times-at-risk</i>	2426	2426	2426	2426	1787	1977
<i>#events</i>	105	105	105	105	84	99
<i>AIC</i>	859.95	855.36	849.76	849.37	643.37	777.66
<i>Log Lik</i>	-401.97	-394.68	-388.88	-382.69	-288.68	-355.83
<i>LR chisq</i>	52.05	66.64	78.23	90.63	44.59	46.96
DBTGDPd	-0.0203	-0.0075	0.004	0.0067	0.009	0.0106
	<i>[0.0175]</i>	<i>[0.0224]</i>	<i>[0.0237]</i>	<i>[0.025]</i>	<i>[0.0263]</i>	<i>[0.0229]</i>
<i>times-at-risk</i>	2399	2399	2399	2399	1767	1950
<i>#events</i>	103	103	103	103	83	97
<i>AIC</i>	836.83	833.57	830.68	826.62	634.29	757.15
<i>Log Lik</i>	-390.42	-383.79	-379.34	-371.31	-284.14	-345.58
<i>LR chisq</i>	55.71	68.96	77.85	93.92	44.63	48.84

PRBAL	0.1803 ***	0.1685 ***	0.1642 **	0.2192 ***	0.1036	0.1462 **
	<i>[0.0509]</i>	<i>[0.0653]</i>	<i>[0.0705]</i>	<i>[0.0796]</i>	<i>[0.0951]</i>	<i>[0.0744]</i>
<i>times-at-risk</i>	1255	1255	1255	1255	761	806
<i>#events</i>	54	54	54	54	42	48
<i>AIC</i>	367.15	363.65	366.02	370.11	269.23	304.98
<i>Log Lik</i>	-161.58	-154.82	-153.01	-149.06	-106.62	-125.49
<i>LR chisq</i>	64.93	78.44	82.07	89.97	43.03	48.06
INFL	0.0035	-0.0881	0.2601	0.2262	0.1938	0.2336
	<i>[0.1456]</i>	<i>[0.1714]</i>	<i>[0.2301]</i>	<i>[0.2599]</i>	<i>[0.2642]</i>	<i>[0.2233]</i>
<i>times-at-risk</i>	2137	2137	2137	2137	1498	1688
<i>#events</i>	91	91	91	91	70	85
<i>AIC</i>	733.35	722.31	712.61	717.07	518.69	644.26
<i>Log Lik</i>	-341.68	-331.15	-323.31	-319.54	-229.34	-292.13
<i>LR chisq</i>	43.36	64.4	80.1	87.64	40.92	47.28
<i>financial development, supervision and regulation</i>						
FINDEV	-0.0081 *	-0.0114 **	-0.0141 **	-0.0174 **	-0.0158 *	-0.0123 **
	<i>[0.0045]</i>	<i>[0.0057]</i>	<i>[0.0059]</i>	<i>[0.0068]</i>	<i>[0.0093]</i>	<i>[0.0062]</i>
<i>times-at-risk</i>	2145	2145	2145	2145	1580	1770
<i>#events</i>	91	91	91	91	71	86
<i>AIC</i>	725.49	716.2	708.52	710.35	527.85	652.28
<i>Log Lik</i>	-336.74	-327.1	-320.26	-315.17	-232.93	-295.14
<i>LR chisq</i>	46.34	65.63	79.31	89.48	42.1	50.12
FINRPR	0.2704	0.0783	0.169	0.1046	0.1563	0.1775
	<i>[0.1981]</i>	<i>[0.2166]</i>	<i>[0.2262]</i>	<i>[0.2291]</i>	<i>[0.2537]</i>	<i>[0.229]</i>
<i>times-at-risk</i>	1897	1897	1897	1897	1369	1519
<i>#events</i>	83	83	83	83	65	79
<i>AIC</i>	637.41	631.01	625.33	618.3	453.13	576.23
<i>Log Lik</i>	-292.71	-284.51	-278.66	-269.15	-195.56	-256.11
<i>LR chisq</i>	43.74	60.14	71.82	90.85	52.17	48.56
SUPERV	-0.1025	-0.2471	-0.3366	-0.4711	-0.6558	-0.1709
	<i>[0.2849]</i>	<i>[0.2859]</i>	<i>[0.2825]</i>	<i>[0.3091]</i>	<i>[0.4208]</i>	<i>[0.3067]</i>
<i>times-at-risk</i>	1897	1897	1897	1897	1369	1519
<i>#events</i>	83	83	83	83	65	79
<i>AIC</i>	639.14	629.41	624.12	615.81	450.82	576.25
<i>Log Lik</i>	-293.57	-283.71	-278.06	-267.91	-194.41	-256.13
<i>LR chisq</i>	42.01	61.74	73.03	93.34	54.49	48.54
FINLIB	-0.376	-1.1572	-1.0508	-1.5798	-1.732	-0.8745
	<i>[0.967]</i>	<i>[1.0409]</i>	<i>[1.0557]</i>	<i>[1.1561]</i>	<i>[1.2923]</i>	<i>[1.0781]</i>
<i>times-at-risk</i>	1897	1897	1897	1897	1369	1519
<i>#events</i>	83	83	83	83	65	79
<i>AIC</i>	639.12	629.39	625.13	616.65	452.68	576.52
<i>Log Lik</i>	-293.56	-283.69	-278.56	-268.33	-195.34	-256.26
<i>LR chisq</i>	42.03	61.77	72.02	92.5	52.63	48.27

The table shows summary results from Cox proportional hazards for quarterly years until countries reach their pre-crisis level of per capita GDP. Stars denote significance at the 1% (***), 5% (**) and 10% (*) levels. Missing values on covariates have been imputed following the method proposed in Honaker et al. (2011). Standard errors are adjusted accordingly and reflect uncertainty that arises from missing values. See text for details.

Table 3: Crises Policies and the Length of Recovery

<i>sample</i>	<i>Spec. 1</i>	<i>Spec. 2</i>	<i>Spec. 3</i>	<i>Spec. 4</i>	<i>Spec. 5</i>	<i>Spec. 6</i>
	<i>full sample</i>				<i>subset EMDC</i>	<i>subset pre-2007</i>
<i>year fixed effects</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>growth controls</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>crisis controls</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>region fixed effects</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>no</i>	<i>no</i>
<i>#parameters</i>	28	33	36	42	33	33
LIQSP	-0.0078	-0.0086	-0.0064	-0.0112 *	-0.007	-0.0064
	<i>[0.0051]</i>	<i>[0.0055]</i>	<i>[0.0057]</i>	<i>[0.0062]</i>	<i>[0.0064]</i>	<i>[0.0057]</i>
<i>times-at-risk</i>	2440	2440	2440	2440	1808	1991
<i>#events</i>	103	103	103	103	83	97
<i>AIC</i>	836.75	828.87	823.17	817.18	628.34	751.05
<i>Log Lik</i>	-390.38	-381.44	-375.58	-366.59	-281.17	-342.52
<i>LR chisq</i>	54.42	72.3	84	101.99	50.09	54.5
MONEX	-0.0398 **	-0.0419 **	-0.0436 **	-0.0549 **	-0.0419 *	-0.0442 **
	<i>[0.0184]</i>	<i>[0.0207]</i>	<i>[0.0221]</i>	<i>[0.0236]</i>	<i>[0.0226]</i>	<i>[0.022]</i>
<i>times-at-risk</i>	2340	2340	2340	2340	1751	1891
<i>#events</i>	91	91	91	91	75	85
<i>AIC</i>	723.56	711.09	708.46	708.99	555.3	638.68
<i>Log Lik</i>	-333.78	-322.55	-318.23	-312.5	-244.65	-286.34
<i>LR chisq</i>	54.2	76.67	85.3	96.77	52.1	56.99
PKLIQ	-0.0021	-0.0033	-0.0025	-0.0041	-0.0021	-0.0021
	<i>[0.0027]</i>	<i>[0.0028]</i>	<i>[0.0032]</i>	<i>[0.0039]</i>	<i>[0.0034]</i>	<i>[0.0032]</i>
<i>times-at-risk</i>	2609	2609	2609	2609	1970	2160
<i>#events</i>	109	109	109	109	88	103
<i>AIC</i>	901.42	894.62	891.01	892.11	682.91	817.51
<i>Log Lik</i>	-422.71	-414.31	-409.5	-404.06	-308.45	-375.75
<i>LR chisq</i>	51.09	67.89	77.5	88.4	45.47	49.14
DBTINC	-0.0042	-0.007 *	-0.0063	-0.0035	-0.004	-0.0051
	<i>[0.0031]</i>	<i>[0.0039]</i>	<i>[0.004]</i>	<i>[0.0045]</i>	<i>[0.0042]</i>	<i>[0.0039]</i>
<i>times-at-risk</i>	2323	2323	2323	2323	1696	1874
<i>#events</i>	100	100	100	100	81	94
<i>AIC</i>	810.27	804.57	798.11	796.49	612.98	726.59
<i>Log Lik</i>	-378.14	-370.28	-364.05	-357.24	-274.49	-331.29
<i>LR chisq</i>	53.4	69.11	81.57	95.19	47.26	50.9
FISCST	-0.0525 ***	-0.0435 *	-0.0309	-0.0359	-0.0319	-0.028
	<i>[0.0183]</i>	<i>[0.0227]</i>	<i>[0.0224]</i>	<i>[0.0236]</i>	<i>[0.0411]</i>	<i>[0.0231]</i>
<i>times-at-risk</i>	1616	1616	1616	1616	1013	1167
<i>#events</i>	64	64	64	64	44	58
<i>AIC</i>	444.75	441.36	432.97	422.81	247.09	368.69
<i>Log Lik</i>	-198.38	-191.68	-184.49	-173.4	-95.54	-155.35
<i>LR chisq</i>	56.8	70.19	84.58	106.75	70.04	58.37
FISPL	-0.0097	0.0482	0.0342	0.0155	0.6134 **	0.01
	<i>[0.0593]</i>	<i>[0.0614]</i>	<i>[0.0652]</i>	<i>[0.0923]</i>	<i>[0.2576]</i>	<i>[0.1081]</i>
<i>times-at-risk</i>	1045	1045	1045	1045	551	596
<i>#events</i>	42	42	42	42	30	36
<i>AIC</i>	268.53	262.79	265.23	257.14	163.09	207.85
<i>Log Lik</i>	-114.26	-106.39	-104.62	-94.57	-56.54	-78.92
<i>LR chisq</i>	57.27	73.01	76.57	96.66	50.1	44.5

The table shows summary results from Cox proportional hazards for quarterly years until countries recover to pre-crisis levels of per-capita GDP. Stars denote significance at the 1% (***), 5% (**) and 10%(*) levels. Missing values on covariates have been imputed following the method proposed in Honaker et al. (2011). Standard errors are adjusted accordingly and reflect uncertainty that arises from missing values. See text for details.

Table 4: The Effect of Time-Varying Global Factors on the Length of Recovery

<i>sample</i>	<i>Spec. 1</i>	<i>Spec. 2</i>	<i>Spec. 3</i>	<i>Spec. 4</i>	<i>Spec. 5</i>	<i>Spec. 6</i>	<i>Spec. 7</i>	<i>Spec. 8</i>	<i>Spec. 9</i>
	<i>full sample</i>					<i>subset EMDC</i>		<i>subset pre-2007</i>	
<i>growth controls</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>crisis controls</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>external controls</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>no</i>	<i>yes</i>	<i>no</i>	<i>yes</i>
<i>region fixed effects</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>
<i>times-at-risk (max.)</i>	2696	2696	2696	2696	2696	2057	2057	2247	2247
<i>#events (max.)</i>	110	110	110	110	110	89	89	104	104
<i>parameters</i>	1	6	9	13	19	9	13	9	13
WRLTRd	0.2577 ***	0.2399 ***	0.2378 ***	0.2428 ***	0.2299 ***	0.2399 ***	0.2895 ***	0.0761	0.0984
	<i>[0.0693]</i>	<i>[0.0683]</i>	<i>[0.0669]</i>	<i>[0.0812]</i>	<i>[0.0829]</i>	<i>[0.0842]</i>	<i>[0.0915]</i>	<i>[0.0986]</i>	<i>[0.0971]</i>
<i>AIC</i>	894.57	886.71	889.25	880.33	882.29	669.48	668.15	806.42	807.72
<i>Log Lik</i>	-446.29	-437.36	-435.62	-427.17	-422.15	-325.74	-321.07	-394.21	-390.86
<i>LR chisq</i>	19.29	37.14	40.61	57.53	67.57	25.73	35.06	27.62	34.31
OILPR	-0.6306 ***	-0.6508 ***	-0.7507 ***	0.1585	0.2385	-0.2126	0.5672	0.0422	0.3572
	<i>[0.1998]</i>	<i>[0.2214]</i>	<i>[0.2229]</i>	<i>[0.3452]</i>	<i>[0.3509]</i>	<i>[0.2725]</i>	<i>[0.3799]</i>	<i>[0.3258]</i>	<i>[0.3704]</i>
<i>AIC</i>	902.67	893.35	893.68	879.97	882.02	679.03	668.47	806.81	807.94
<i>Log Lik</i>	-450.34	-440.68	-437.84	-426.98	-422.01	-330.52	-321.24	-394.4	-390.97
<i>LR chisq</i>	11.19	30.51	36.18	57.89	67.84	16.18	34.74	27.22	34.09
FFR	0.0258	0.0313	0.0519	-0.0171	-0.0382	-0.0148	-0.0462	-0.0531	-0.0556
	<i>[0.0288]</i>	<i>[0.0353]</i>	<i>[0.0368]</i>	<i>[0.0447]</i>	<i>[0.0454]</i>	<i>[0.0469]</i>	<i>[0.0509]</i>	<i>[0.0444]</i>	<i>[0.0469]</i>
<i>AIC</i>	913.07	901.86	903.63	880.07	881.93	679.19	668.57	808.91	808.22
<i>Log Lik</i>	-455.53	-444.93	-442.82	-427.04	-421.96	-330.59	-321.28	-393.95	-391.11
<i>LR chisq</i>	0.79	22	26.22	57.79	67.93	16.02	34.64	28.12	33.81
MONSHK	-0.1782	-0.0807	-0.0995	0.1582	0.1459	-0.3191	-0.0749	-0.1714	0.0489
	<i>[0.2611]</i>	<i>[0.276]</i>	<i>[0.2829]</i>	<i>[0.3565]</i>	<i>[0.3564]</i>	<i>[0.3369]</i>	<i>[0.4085]</i>	<i>[0.289]</i>	<i>[0.3546]</i>
<i>AIC</i>	817.06	809.9	807.81	811.53	812.8	639.26	640.77	802.31	806.27
<i>Log Lik</i>	-407.53	-398.95	-394.9	-391.77	-386.4	-310.63	-306.39	-392.16	-389.14
<i>LR chisq</i>	0.49	17.65	25.74	32.02	42.75	21.98	30.47	28.62	34.66
GOLD	-1.0237 ***	-1.132 ***	-1.2965 ***	-1.3101 ***	-1.46 ***	-0.9786 **	-1.3644 ***	-0.7147	-0.8273
	<i>[0.2703]</i>	<i>[0.289]</i>	<i>[0.2869]</i>	<i>[0.4287]</i>	<i>[0.4383]</i>	<i>[0.4052]</i>	<i>[0.4989]</i>	<i>[0.4603]</i>	<i>[0.5139]</i>
<i>AIC</i>	897.18	885.9	884.15	880.25	881.83	673.63	668.51	804.92	808.3
<i>Log Lik</i>	-447.59	-436.95	-433.08	-427.12	-421.92	-327.82	-321.25	-393.46	-391.15
<i>LR chisq</i>	16.68	37.96	45.71	57.61	68.03	21.57	34.7	29.11	33.73
VOLATBL	-3e-04 ***	-2e-04 **	-3e-04 **	0	0	-0.0001	0.0001	0.0002	0.0002
	<i>[1e-04]</i>	<i>[1e-04]</i>	<i>[1e-04]</i>	<i>[1e-04]</i>	<i>[1e-04]</i>	<i>[1e-04]</i>	<i>[1e-04]</i>	<i>[1e-04]</i>	<i>[1e-04]</i>
<i>AIC</i>	905.07	895.96	898.76	880.26	881.84	678.63	668.26	805.33	808.13
<i>Log Lik</i>	-451.54	-441.98	-440.38	-427.13	-421.92	-330.31	-321.13	-393.66	-391.06
<i>LR chisq</i>	8.79	27.9	31.1	57.6	68.02	16.58	34.94	28.7	33.9

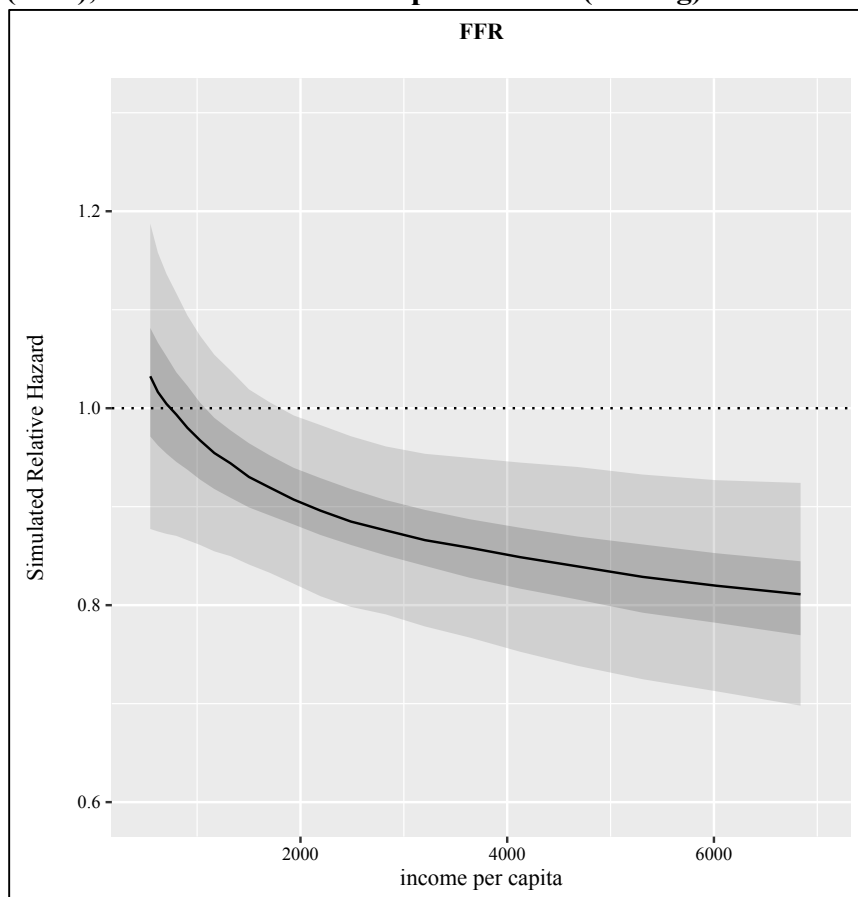
The table shows summary results from Cox proportional hazards for quarterly years until pre-crisis per capita GDP is reached. Stars denote significance at the 1% (***) and 5% (**) and 10% (*) levels. Missing values on covariates have been imputed following the method proposed in Honaker et al. (2011). Standard errors are adjusted accordingly and reflect uncertainty that arises from missing values. See text for details.

Table 5: Effect of Global Interest Rate Shocks on the Length of Recovery, Conditional on Per Capita Income (INClog). Subset of Emerging Markets and Developing Countries

	<i>Spec. 1</i>	<i>Spec. 2</i>	<i>Spec. 3</i>	<i>Spec. 4</i>	<i>Spec. 5</i>
<i>growth controls</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>crisis controls</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>external controls</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>
<i>region fixed effects</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>
<i># parameters</i>	3	7	10	14	19
FFR	0.6853 ** [0.298]	0.6713 ** [0.285]	0.693 ** [0.2853]	1.0189 *** [0.3408]	1.0277 *** [0.3423]
INClog	0.4556 * [0.2376]	0.2726 [0.2724]	0.324 [0.3035]	0.5363 [0.3279]	0.3763 [0.4326]
FFR:INClog	-0.1014 ** [0.0402]	-0.0952 ** [0.0386]	-0.0959 ** [0.0391]	-0.1453 *** [0.0466]	-0.1493 *** [0.0468]
<i>times-at-risk</i>	2057	2057	2057	2057	2057
<i>#events</i>	89	89	89	89	89
<i>AIC</i>	673.42	674.35	675.23	660.7	661.64
<i>Log Lik</i>	-333.71	-330.17	-327.62	-316.35	-311.82
<i>LR chisq</i>	9.78	16.86	21.98	44.5	53.57
MONSHK	-0.2692 [2.1282]	0.0038 [2.139]	0.1699 [2.1687]	0.4879 [2.2933]	0.6893 [2.3342]
INClog	-0.0572 [0.11]	-0.3041 ** [0.1473]	-0.2416 [0.1651]	-0.2526 [0.1889]	-0.4125 [0.3231]
MONSHK:INClog	-0.0066 [0.2868]	-0.0347 [0.287]	-0.0671 [0.2948]	-0.0792 [0.3141]	-0.1095 [0.3226]
<i>times-at-risk</i>	1955	1955	1955	1955	1955
<i>#events</i>	86	86	86	86	86
<i>AIC</i>	647.68	643.15	641.95	643.62	644.53
<i>Log Lik</i>	-320.84	-314.57	-310.98	-306.81	-302.27
<i>LR chisq</i>	1.56	14.1	21.29	29.62	38.71

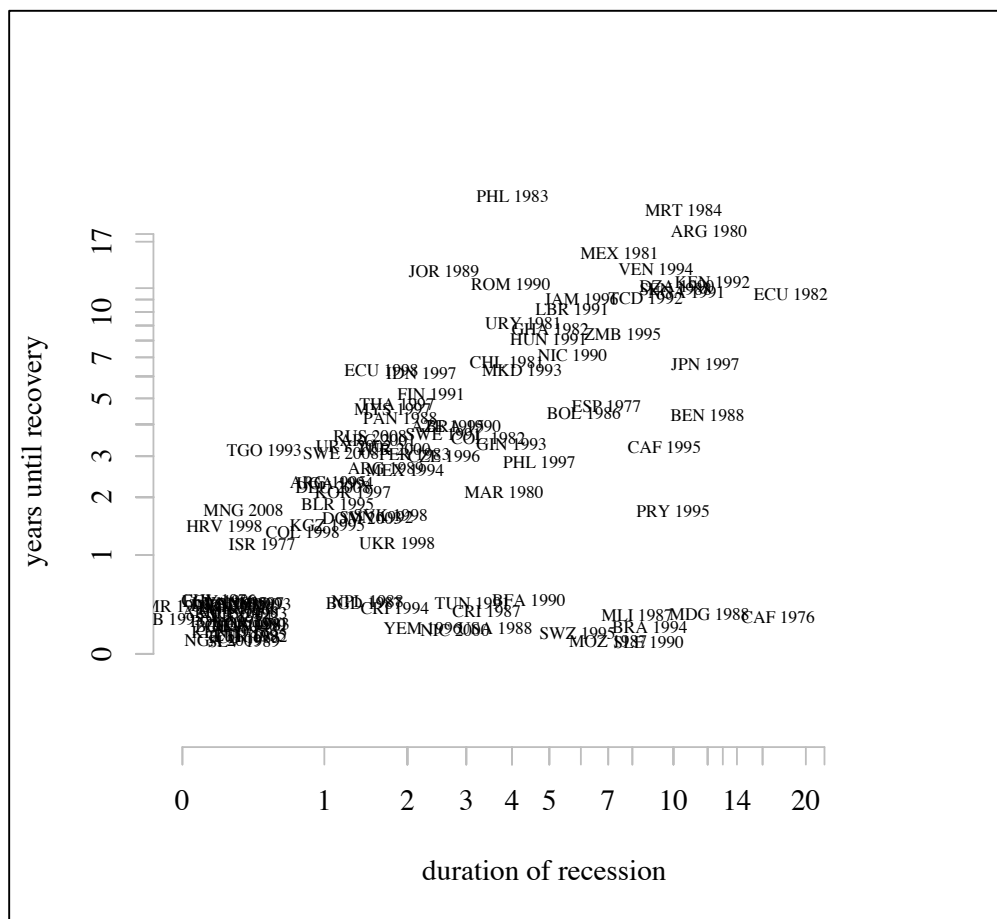
The table shows summary results from Cox proportional hazards for quarterly years until countries reach their pre-crisis level of per capita GDO, for the subset of emerging markets and developing countries. Stars denote significance at the 1% (***), 5% (**) and 10% (*) levels. Missing values on covariates have been imputed following the method proposed in Honaker et al. (2011). Standard errors are adjusted accordingly and reflect uncertainty that arises from missing values. See text for details.

Figure 2: Simulated Relative Hazards for the Probability of Recovery as a Result of an Increase in the Federal Fund Rate (FFR), Conditional on Per Capita Income (INClog)



Parameters are based upon Spec 5 in Table 6, based upon the full set of controls for a subsample of emerging markets and developing countries. The plotted effects refer to a one percentage point increase in the federal fund rate (FFR). Hazard rates below 1 indicate that an increase in FFR is associated with more negative prospects of recovery. Shaded areas depict 95% (50%) confidence intervals. For the sake of graphical representation, the variable INClog has been transformed back from logs. R-Code for the graphical representation has been adapted from Gandrud (2015).

Figure 3: Length of Recovery and Duration of Recessions after Banking Crises



The figure plots the duration of recovery from banking crises (y-axis) against the length of post-crisis recessions (x-axis), for all banking crises incidents where either recovery or the end of a post-crisis recession had occurred by 2013. Axes are scaled in logs for better representation.

Table 6: Effect of Crises Characteristics and Basic Growth Controls on the Duration of Post-Crisis Recessions

<i>sample</i>	<i>Spec. 1</i>	<i>Spec. 2</i>	<i>Spec. 3</i>	<i>Spec. 4</i>	<i>Spec. 5</i>	<i>Spec. 6</i>	<i>Spec. 7</i>	<i>Spec. 8</i>	<i>Spec. 9</i>	<i>Spec. 10</i>
	<i>full set</i>								<i>subset EMDC</i>	<i>subset pre-2007</i>
<i>#events</i>	118		118		83		118		93	97
<i>times-at-risk</i>	2329		2329		1690		2329		1793	1984
<i>#parameters</i>	28	33	28	33	26	31	35	41	32	32
<i>year fixed effects</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>region fixed effects</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>no</i>	<i>no</i>
<i>AIC</i>	945.8	932.7	944.78	933.85	609.29	605.96	930.77	922.75	667.05	801.86
<i>Log Lik</i>	-444.9	-433.35	-444.39	-433.92	-278.65	-271.98	-430.39	-420.38	-301.53	-368.93
<i>LR chisq</i>	44.37	67.47	45.39	66.32	52.07	65.41	73.4	93.42	68.05	63
CURRCR	0.1515 [0.2647]	0.0164 [0.2862]	-0.3608 [0.3431]	-0.3017 [0.3576]	-0.0221 *** [0.0084]	-0.0168 [0.0105]	0.1484 [0.3331]	-0.0012 [0.3555]	-0.1277 [0.4039]	0.113 [0.3444]
DEBTCCR							-0.2744 [0.4159]	-0.3344 [0.4243]	-0.7042 [0.4556]	-0.2874 [0.4309]
PKNPL							-0.0162 [0.0099]	-0.006 [0.0095]	-0.0144 [0.0112]	-0.0159 [0.0103]
GDPTRD		0.072 ** [0.0334]	0.2117 *** [0.08]	0.0661 * [0.0342]	0.2301 ** [0.0997]	0.1228 ** [0.0529]	0.0468 [0.0341]	0.0998 ** [0.0498]	0.044 [0.0455]	0.0442 [0.0402]
GDPVOL		0.0573 ** [0.0263]					0.0724 ** [0.032]	0.0677 ** [0.0328]	0.0787 ** [0.0337]	0.0657 ** [0.0304]
HUMCAP		0.2351 *** [0.0783]					0.1864 ** [0.0825]	0.1028 [0.1049]	0.2035 [0.1248]	0.2014 ** [0.0954]
INClog		-0.1852 [0.1505]	0.0551 [0.0598]	-0.1502 [0.1503]	-0.1633 [0.1633]	-0.1545 [0.1564]	-0.1545 [0.1564]	-0.2851 [0.2245]	-0.0674 [0.2567]	-0.1604 [0.1818]
XPSH		0.0449 [0.0617]					0.0642 [0.0614]	0.0489 [0.0705]	0.0475 [0.0884]	0.0664 [0.0674]

The table shows coefficients of a Cox proportional hazards model for quarterly years until countries exit a post-crisis recession period. A negative coefficient sign indicates that higher values of that variable are associated with longer duration of recovery. Stars denote significance at the 1% (***), 5% (**) and 10% (*) levels. Coefficients are averaged after running the regression on 50 imputed datasets following the method proposed in Honaker et al. (2011). Standard errors are adjusted accordingly and reflect uncertainty that arises from missing values. See text for details.

Table 7: The Effect of Country Conditions on the Duration of Post-Crisis Recessions

sample	Spec. 1	Spec. 2	Spec. 3	Spec. 4	Spec. 5	Spec. 6
	full sample				subset EMDC	subset pre-2007
year fixed effects	yes	yes	yes	yes	yes	yes
growth controls	no	yes	yes	yes	yes	yes
crisis controls	no	no	yes	yes	yes	yes
region fixed effects	no	no	no	yes	no	no
#parameters	28	33	36	42	33	33
balance of payments and the exchange rate						
KAOPEN	-0.5218 [0.4287]	-0.6243 [0.4323]	-0.6918 [0.4495]	-0.2985 [0.566]	-0.3502 [0.6597]	-0.5466 [0.486]
times-at-risk	2278	2278	2278	2278	1749	1934
#events	111	111	111	111	88	101
AIC	875.16	866.22	864.83	855.66	622.42	747.49
Log Lik	-409.58	-400.11	-396.41	-385.83	-278.21	-340.75
LR chisq	48.45	67.4	74.79	95.95	70.26	64.02
UNDVAL	0.7212 *** [0.2583]	0.8926 *** [0.3377]	1.1119 *** [0.3748]	0.5183 [0.4231]	1.6969 *** [0.4731]	1.1141 *** [0.3919]
times-at-risk	2174	2174	2174	2174	1638	1829
#events	111	111	111	111	86	100
AIC	877.22	864.3	863.4	855.85	595.26	736.28
Log Lik	-410.61	-399.15	-395.7	-385.93	-264.63	-335.14
LR chisq	46.64	69.56	76.47	96.01	78.89	65.66
XRFXED	-0.2151 [0.2769]	0.161 [0.3004]	0.219 [0.3105]	0.229 [0.3136]	0.4929 [0.3773]	0.4785 [0.353]
times-at-risk	2245	2245	2245	2245	1709	1900
#events	110	110	110	110	85	99
AIC	876.11	862.48	865.77	856.56	602.54	736.07
Log Lik	-410.06	-398.24	-396.88	-386.28	-268.27	-335.04
LR chisq	39.23	62.85	65.57	86.77	63.49	57.65
RESRV	1.8988 * [1.0009]	-0.464 [1.5352]	-1.5218 [1.7476]	-1.9837 [2.1646]	-2.6397 [2.723]	-3.0357 [2.4999]
times-at-risk	2307	2307	2307	2307	1771	1962
#events	116	116	116	116	91	105
AIC	925.79	914.29	914.4	901.83	651.02	783.88
Log Lik	-434.89	-424.14	-421.2	-408.91	-292.51	-358.94
LR chisq	44.87	66.37	72.25	96.83	67.9	64.22
debt and inflation						
FORASS	-0.0088 [0.0524]	-0.0572 [0.0629]	-0.0543 [0.0638]	-0.1486 * [0.0765]	-0.0865 [0.0777]	-0.0501 [0.0682]
times-at-risk	2298	2298	2298	2298	1762	1953
#events	114	114	114	114	89	103
AIC	908.96	896.07	895.91	882.8	633.66	767.77
Log Lik	-426.48	-415.04	-411.96	-399.4	-283.83	-350.89
LR chisq	42.52	65.41	71.57	96.68	67.35	61.89
DBTGDP	-0.0041 * [0.0023]	-0.0024 [0.0021]	-0.0025 [0.0021]	-0.0008 [0.0022]	0 [0.0024]	-0.0023 [0.0021]
times-at-risk	2152	2152	2152	2152	1616	1807
#events	111	111	111	111	86	100
AIC	878.88	869.39	870.98	855.69	609.83	742.45
Log Lik	-411.44	-401.69	-399.49	-385.85	-271.91	-338.22
LR chisq	45.89	65.38	69.78	97.07	63.96	59.16
DBTGDPd	-0.0413 ** [0.018]	-0.0042 [0.0214]	-0.0042 [0.0216]	0.0155 [0.023]	0.0044 [0.0274]	-0.0009 [0.0232]
times-at-risk	2169	2169	2169	2169	1639	1824
#events	109	109	109	109	85	98
AIC	856.09	850.06	851.8	834.7	601.16	724.35
Log Lik	-400.05	-392.03	-389.9	-375.35	-267.58	-329.17
LR chisq	49.02	65.06	69.31	98.41	64.53	59.32

PRBAL	0.0896 **	n.d.	n.d.	0.1597 **	-0.021	0.016
	<i>[0.0405]</i>			<i>[0.0638]</i>	<i>[0.1019]</i>	<i>[0.0768]</i>
<i>times-at-risk</i>	1156			1156	723	811
<i>#events</i>	60			60	44	49
<i>AIC</i>	419.69			405.11	250.1	290.57
<i>Log Lik</i>	-187.84			-166.56	-97.05	-118.29
<i>LR chisq</i>	41.6			84.17	64.66	61.17
INFL	0.1821	0.2327	0.4295 *	0.2804	0.2971	0.4293 *
	<i>[0.1596]</i>	<i>[0.1655]</i>	<i>[0.2238]</i>	<i>[0.2469]</i>	<i>[0.2984]</i>	<i>[0.2423]</i>
<i>times-at-risk</i>	1855	1855	1855	1855	1319	1510
<i>#events</i>	98	98	98	98	73	87
<i>AIC</i>	761.94	754.2	750.5	746.45	494.71	625.19
<i>Log Lik</i>	-355.97	-347.1	-342.25	-334.23	-217.36	-282.6
<i>LR chisq</i>	38.53	56.28	65.97	82.03	60.56	53.95
<i>financial development, supervision and regulation</i>						
FINDEV	-0.008 **	-0.0123 **	-0.013 **	-0.0171	-0.0046	-0.0129 **
	<i>[0.0038]</i>	<i>[0.0052]</i>	<i>[0.0053]</i>	*** <i>[0.0065]</i>	<i>[0.0089]</i>	<i>[0.0064]</i>
<i>times-at-risk</i>	1837	1837	1837	1837	1355	1546
<i>#events</i>	96	96	96	96	73	87
<i>AIC</i>	736.49	728.58	729.86	715.35	505.04	629.29
<i>Log Lik</i>	-342.25	-333.29	-330.93	-317.68	-221.52	-283.64
<i>LR chisq</i>	41.97	59.88	64.61	91.11	51.49	51.21
FINRPR	0.269	0.225	0.2751	0.4111 *	0.3624	0.5228 **
	<i>[0.1772]</i>	<i>[0.2112]</i>	<i>[0.2236]</i>	<i>[0.21]</i>	<i>[0.2607]</i>	<i>[0.2441]</i>
<i>times-at-risk</i>	1475	1475	1475	1475	1021	1171
<i>#events</i>	87	87	87	87	67	80
<i>AIC</i>	649.06	651.39	648.13	627.73	435.72	555.38
<i>Log Lik</i>	-298.53	-294.69	-290.06	-273.87	-186.86	-245.69
<i>LR chisq</i>	43.15	50.82	60.09	92.48	62.05	53.73
SUPERV	0.2642	0.2794	0.3246	0.4183	0.6845	0.6278 *
	<i>[0.2645]</i>	<i>[0.2974]</i>	<i>[0.3124]</i>	<i>[0.3483]</i>	<i>[0.4732]</i>	<i>[0.3479]</i>
<i>times-at-risk</i>	1475	1475	1475	1475	1021	1171
<i>#events</i>	87	87	87	87	67	80
<i>AIC</i>	650.38	652.83	650.14	630.11	435.64	558.17
<i>Log Lik</i>	-299.19	-295.42	-291.07	-275.05	-186.82	-247.09
<i>LR chisq</i>	41.83	49.38	58.07	90.1	62.12	50.93
FINLIB	-0.6392	-1.1572	-0.825	0.5479	-0.968	-0.3575
	<i>[0.9769]</i>	<i>[1.2044]</i>	<i>[1.2964]</i>	<i>[1.3052]</i>	<i>[1.7154]</i>	<i>[1.3832]</i>
<i>times-at-risk</i>	1475	1475	1475	1475	1021	1171
<i>#events</i>	87	87	87	87	67	80
<i>AIC</i>	650.91	653.24	650.33	631.48	436.84	560.82
<i>Log Lik</i>	-299.46	-295.62	-291.17	-275.74	-187.42	-248.41
<i>LR chisq</i>	41.3	48.97	57.88	88.73	60.92	48.29

The table shows summary results from Cox proportional hazards for quarterly years until countries exit a post-crisis recession period. Stars denote significance at the 1% (***), 5% (**) and 10%(*) levels. Missing values on covariates have been imputed following the method proposed in Honaker et al. (2011). Standard errors are adjusted accordingly and reflect uncertainty that arises from missing values. Two specifications for the variable PRBAL did not have a solution due to a low number of events relative to the number of predictor variables. See text for details.

Table 8: Crises Policies and the Duration of Post-Crisis Recessions

<i>sample</i>	<i>Spec. 1</i>	<i>Spec. 2</i>	<i>Spec. 3</i>	<i>Spec. 4</i>	<i>Spec. 5</i>	<i>Spec. 6</i>
	<i>full sample</i>				<i>subset EMDC</i>	<i>subset pre-2007</i>
<i>year fixed effects</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>growth controls</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>crisis controls</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>region fixed effects</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>no</i>	<i>no</i>
<i>#parameters</i>	28	33	36	42	33	33
LIQSP	-0.0028	-0.0014	-0.0001	n.d.	-0.0415	0.0003
	<i>[0.0045]</i>	<i>[0.005]</i>	<i>[0.0051]</i>		<i>[9.8581]</i>	<i>[0.0052]</i>
<i>times-at-risk</i>	2197	2197	2197		1667	1852
<i>#events</i>	109	109	109		85	98
<i>AIC</i>	861.59	850.37	850.54		2573.11	723.94
<i>Log Lik</i>	-402.8	-392.19	-389.27		-1255.35	-328.97
<i>LR chisq</i>	42.49	63.72	69.55		-1910.86	59.92
MONEX	-0.0193	-0.0253	-0.0214	-0.0338 *	-0.026	-0.0211
	<i>[0.0155]</i>	<i>[0.0181]</i>	<i>[0.0182]</i>	<i>[0.0191]</i>	<i>[0.0212]</i>	<i>[0.0193]</i>
<i>times-at-risk</i>	2110	2110	2110	2110	1617	1765
<i>#events</i>	97	97	97	97	77	86
<i>AIC</i>	736.99	727.61	727.4	725.37	523.62	634.91
<i>Log Lik</i>	-340.49	-330.81	-327.7	-320.68	-228.81	-284.52
<i>LR chisq</i>	54.98	74.36	80.57	94.6	72.02	41.05
PKLIQ	0.002	0.003	0.0045	0.0017	0.0026	0.005
	<i>[0.0028]</i>	<i>[0.003]</i>	<i>[0.0032]</i>	<i>[0.0038]</i>	<i>[0.0036]</i>	<i>[0.0032]</i>
<i>times-at-risk</i>	2307	2307	2307	2307	1771	1962
<i>#events</i>	116	116	116	116	91	105
<i>AIC</i>	928.3	914.81	914.85	906.92	654.45	785.77
<i>Log Lik</i>	-436.15	-424.4	-421.43	-411.46	-294.22	-359.88
<i>LR chisq</i>	42.36	65.85	71.8	91.74	64.46	62.34
DBTINC	-0.0058 **	-0.0062 *	-0.0062 *	-0.0006	-0.0039	-0.0058
	<i>[0.0029]</i>	<i>[0.0034]</i>	<i>[0.0036]</i>	<i>[0.0042]</i>	<i>[0.0042]</i>	<i>[0.0039]</i>
<i>times-at-risk</i>	2151	2151	2151	2151	1623	1806
<i>#events</i>	106	106	106	106	83	95
<i>AIC</i>	825.3	823.5	822.74	805.31	583.26	696.66
<i>Log Lik</i>	-385.65	-379.75	-376.37	-361.66	-259.63	-316.33
<i>LR chisq</i>	49.37	61.17	67.93	97.36	61.94	57.84
FISCST	-0.0064	-0.0243	n.d.	-0.0217	n.d.	-0.0033
	<i>[0.0143]</i>	<i>[0.0177]</i>		<i>[0.0198]</i>		<i>[0.0239]</i>
<i>times-at-risk</i>	1125	1125		1125		780
<i>#events</i>	70	70		70		59
<i>AIC</i>	502.66	491		497.85		368.15
<i>Log Lik</i>	-227.33	-216.5		-210.92		-155.08
<i>LR chisq</i>	39.29	60.95		72.1		55.37
FISPL	-0.0011	-0.0148	-0.0221	n.d.	n.d.	0.0739
	<i>[0.0395]</i>	<i>[0.043]</i>	<i>[0.0445]</i>			<i>[0.1204]</i>
<i>times-at-risk</i>	940	940	940			595
<i>#events</i>	47	47	47			36
<i>AIC</i>	318.03	316.33	313.94			191.27
<i>Log Lik</i>	-139.02	-133.17	-128.97			-70.64
<i>LR chisq</i>	36.74	48.44	56.83			58.58

The table shows summary results from Cox proportional hazards for quarterly years until countries exit a post-crisis recession period. Stars denote significance at the 1% (***) and 5% (**) and 10%(*) levels. Missing values on covariates have been imputed following the method proposed in Honaker et al. (2011). Standard errors are adjusted accordingly and reflect uncertainty that arises from missing values. Several specifications did not have a solution due to a low number of events relative to the number of predictor variables. See text for details.

Table 9: The Effect of Global Time-Varying Variables on the Duration of Post-Crisis Recessions

<i>sample</i>	<i>Spec. 1</i>	<i>Spec. 2</i>	<i>Spec. 3</i>	<i>Spec. 4</i>	<i>Spec. 5</i>	<i>Spec. 6</i>	<i>Spec. 7</i>	<i>Spec. 8</i>	<i>Spec. 9</i>
	<i>full sample</i>					<i>subset EMDC</i>		<i>subset pre-2007</i>	
<i>growth controls</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>crisis controls</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>external controls</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>no</i>	<i>yes</i>	<i>no</i>	<i>yes</i>
<i>region fixed effects</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>
<i>times-at-risk (max.)</i>	2696	2696	2696	2696	2696	2057	2057	2247	2247
<i>#events (max.)</i>	110	110	110	110	110	89	89	104	104
<i>parameters</i>	1	6	9	13	19	9	13	9	13
WRLTRd	0.0564	0.0814	0.0815	-0.0255	-0.0445	0.156 *	0.1249	-0.0506	-0.0597
	[0.055]	[0.0549]	[0.0552]	[0.0755]	[0.0783]	[0.0801]	[0.0922]	[0.0955]	[0.0983]
<i>AIC</i>	935.05	917.8	923.1	914.32	900.23	656.33	661.69	783.96	787.03
<i>Log Lik</i>	-466.53	-452.9	-452.55	-444.16	-431.11	-319.17	-317.85	-382.98	-380.52
<i>LR chisq</i>	1.11	28.37	29.06	45.85	71.94	32.77	35.41	34.89	39.83
OILPR	-0.3592 **	-0.6064 ***	-0.6459 ***	-0.0477	0.0404	-0.3362	-0.033	-0.262	-0.0227
	[0.1784]	[0.1979]	[0.2044]	[0.3228]	[0.3402]	[0.2844]	[0.3682]	[0.3016]	[0.3548]
<i>AIC</i>	931.79	910.19	914.93	914.32	900.23	659.17	661.69	783.45	787.03
<i>Log Lik</i>	-464.89	-449.09	-448.47	-444.16	-431.11	-320.58	-317.85	-382.73	-380.52
<i>LR chisq</i>	4.38	35.98	37.24	45.85	71.94	29.93	35.41	35.41	39.83
FFR	-0.0298	0.0148	0.0136	-0.048	-0.0641	-0.035	-0.0588	-0.0763 *	-0.0667
	[0.0296]	[0.0357]	[0.0371]	[0.0432]	[0.0456]	[0.0471]	[0.0507]	[0.0462]	[0.0471]
<i>AIC</i>	935.13	919.94	925.26	914.32	900.23	660.01	661.69	781.33	787.03
<i>Log Lik</i>	-466.57	-453.97	-453.63	-444.16	-431.11	-321.01	-317.85	-381.67	-380.52
<i>LR chisq</i>	1.04	26.23	26.91	45.85	71.94	29.09	35.41	37.52	39.83
MONSHK	-0.3726	-0.2157	-0.208	-0.1865	-0.2935	-0.1976	-0.2155	-0.3425	-0.252
	[0.2541]	[0.2943]	[0.2962]	[0.3534]	[0.3568]	[0.3308]	[0.4071]	[0.3061]	[0.3852]
<i>AIC</i>	838.51	817.42	821.68	825.14	811.42	628.64	635.75	778.19	783.44
<i>Log Lik</i>	-418.26	-402.71	-401.84	-398.57	-385.71	-305.32	-303.87	-380.1	-377.72
<i>LR chisq</i>	2.14	33.23	34.97	41.51	67.23	28.44	31.33	36.06	40.81
GOLD	-0.651 **	-0.9751 ***	-1.0153 ***	-1 **	-1.1576 ***	-0.4948	-0.311	-0.6101	-0.5691
	[0.253]	[0.2705]	[0.2741]	[0.4234]	[0.4391]	[0.4378]	[0.5545]	[0.4735]	[0.5517]
<i>AIC</i>	928.75	906.11	910.92	914.32	900.23	659.26	661.69	782.57	787.03
<i>Log Lik</i>	-463.37	-447.05	-446.46	-444.16	-431.11	-320.63	-317.85	-382.28	-380.52
<i>LR chisq</i>	7.42	40.06	41.25	45.85	71.94	29.85	35.41	36.29	39.83
VOLATBL	-0.0002	-2e-04 **	-2e-04 **	-0.0002	-3e-04 **	-2e-04 *	-0.0001	-0.0001	-0.0001
	[1e-04]	[1e-04]	[1e-04]	[1e-04]	[1e-04]	[1e-04]	[2e-04]	[2e-04]	[2e-04]
<i>AIC</i>	933.59	914.6	919.88	914.32	900.23	657.51	661.69	783.71	787.03
<i>Log Lik</i>	-465.79	-451.3	-450.94	-444.16	-431.11	-319.76	-317.85	-382.85	-380.52
<i>LR chisq</i>	2.58	31.57	32.29	45.85	71.94	31.59	35.41	35.15	39.83

The table shows summary results from Cox proportional hazards for quarterly years until countries exit a post-crisis recession period. Stars denote significance at the 1% (***), 5% (**) and 10%(*) levels. Missing values on covariates have been imputed following the method proposed in Honaker et al. (2011). Standard errors are adjusted accordingly and reflect uncertainty that arises from missing values. See text for details.

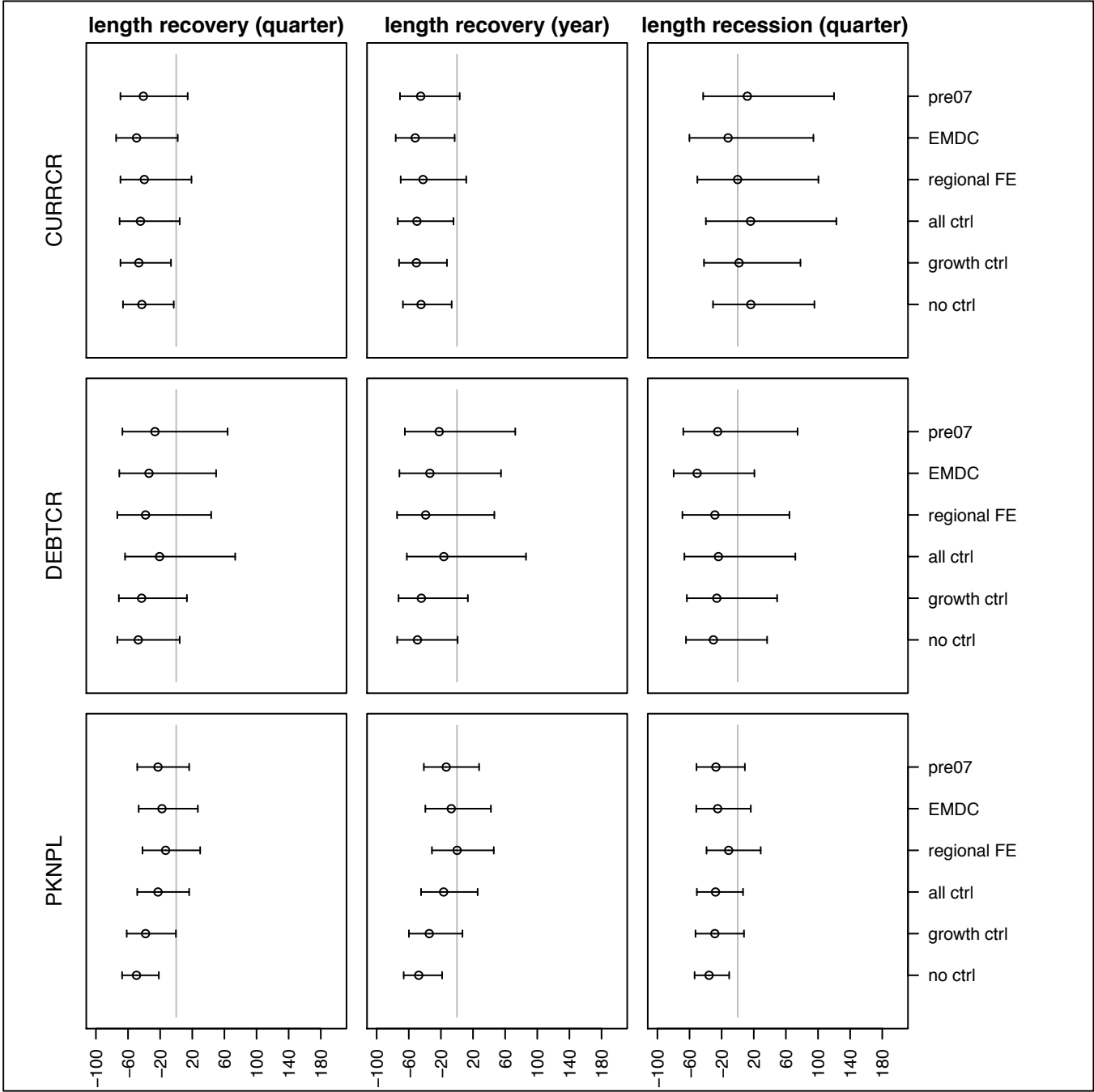
Table 10: Effect of Global Interest Rate Shocks on the Duration of Post-Crisis Recessions, Conditional on Per Capita Income (INClog). Subset of Emerging Markets and Developing Countries

	<i>Spec. 1</i>	<i>Spec. 2</i>	<i>Spec. 3</i>	<i>Spec. 4</i>	<i>Spec. 5</i>
<i>growth controls</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>crisis controls</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
<i>external controls</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>
<i>region fixed effects</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>
<i># parameters</i>	<i>3</i>	<i>7</i>	<i>10</i>	<i>14</i>	<i>19</i>
FFR	0.2218 [0.2798]	0.2842 [0.2746]	0.3243 [0.2766]	0.5782 * [0.3247]	0.3892 [0.3532]
INClog	0.4633 ** [0.2268]	0.1997 [0.2535]	0.2392 [0.2674]	0.4447 [0.2976]	0.2624 [0.4164]
FFR:INClog	-0.0451 [0.038]	-0.0453 [0.0369]	-0.0499 [0.0373]	-0.0886 ** [0.0447]	-0.065 [0.0495]
<i>times-at-risk</i>	<i>1793</i>	<i>1793</i>	<i>1793</i>	<i>1793</i>	<i>1793</i>
<i>#events</i>	<i>93</i>	<i>93</i>	<i>93</i>	<i>93</i>	<i>93</i>
<i>AIC</i>	<i>663.92</i>	<i>658.43</i>	<i>663.16</i>	<i>663.31</i>	<i>654.94</i>
<i>Log Lik</i>	<i>-328.96</i>	<i>-322.21</i>	<i>-321.58</i>	<i>-317.66</i>	<i>-308.47</i>
<i>LR chisq</i>	<i>13.18</i>	<i>26.68</i>	<i>27.94</i>	<i>35.79</i>	<i>54.16</i>
MONSHK	3.6911 ** [1.6949]	4.6028 ** [1.7993]	4.6341 ** [1.8075]	5.6824 *** [2.0067]	5.6655 *** [2.1089]
INClog	0.2278 ** [0.1087]	-0.0852 [0.1495]	-0.0597 [0.1608]	0.0091 [0.1688]	-0.0557 [0.2957]
MONSHK:INClog	-0.5316 ** [0.2225]	-0.6416 *** [0.2373]	-0.6476 *** [0.2386]	-0.7827 *** [0.2594]	-0.7991 *** [0.2736]
<i>times-at-risk</i>	<i>1756</i>	<i>1756</i>	<i>1756</i>	<i>1756</i>	<i>1756</i>
<i>#events</i>	<i>88</i>	<i>88</i>	<i>88</i>	<i>88</i>	<i>88</i>
<i>AIC</i>	<i>634.49</i>	<i>623.67</i>	<i>628.14</i>	<i>633.59</i>	<i>622.82</i>
<i>Log Lik</i>	<i>-314.25</i>	<i>-304.84</i>	<i>-304.07</i>	<i>-301.79</i>	<i>-291.41</i>
<i>LR chisq</i>	<i>10.58</i>	<i>29.4</i>	<i>30.94</i>	<i>35.48</i>	<i>56.25</i>

The table shows summary results from Cox proportional hazards for quarterly years until countries exit a post-crisis recession period, for the subset of emerging markets and developing countries. Stars denote significance at the 1% (***), 5% (**) and 10%(*) levels. Missing values on covariates have been imputed following the method proposed in Honaker et al. (2011). Standard errors are adjusted accordingly and reflect uncertainty that arises from missing values. See text for details.

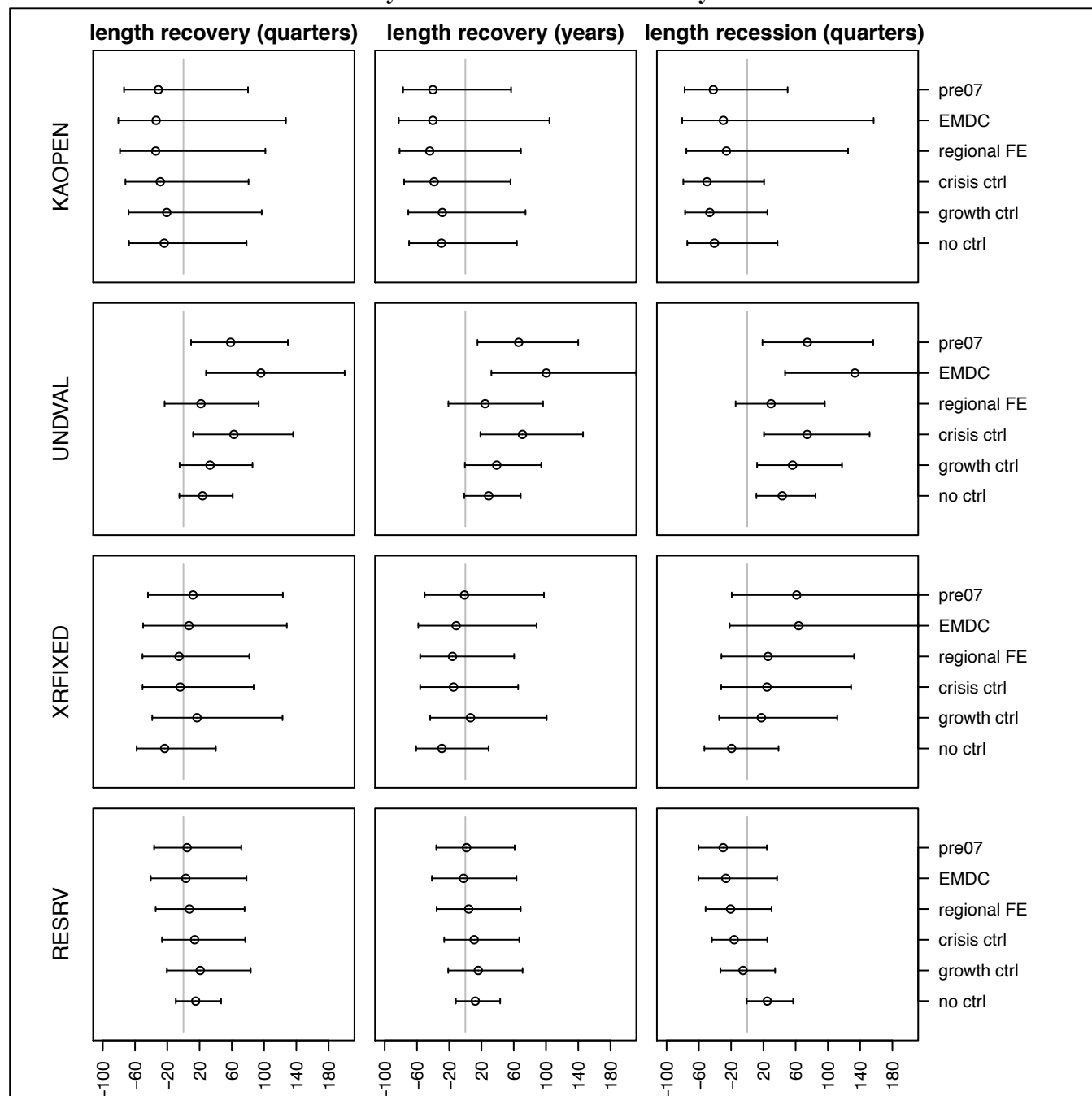
IX. Online Appendix

Annex 1: Hazard Plots for Crises Characteristics



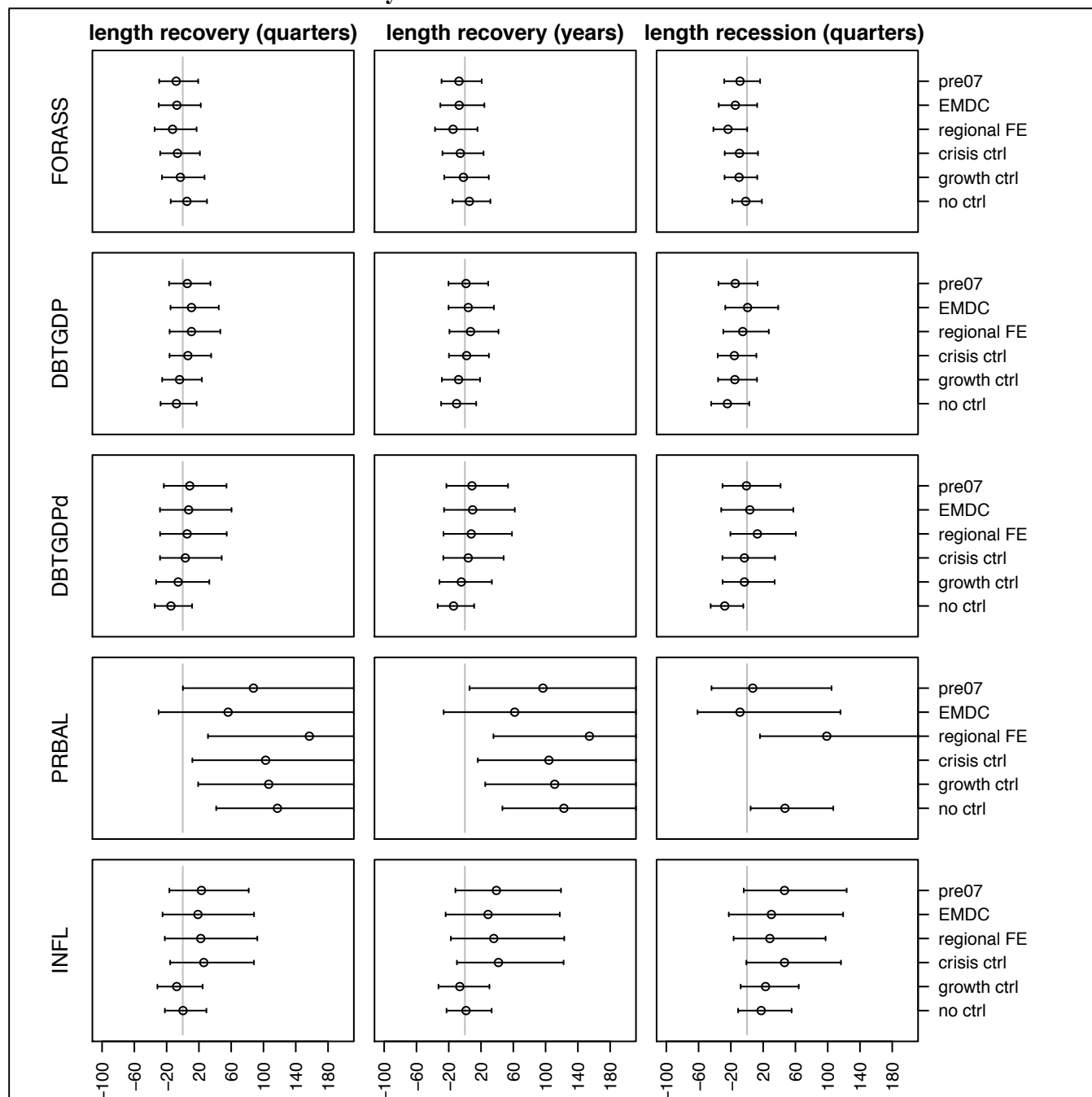
The figure plots hazard rates (i.e. the probability of the occurrence of an event in any given period with respect to a reference group) with 95% confidence intervals as obtained from exponentiating coefficients from Cox proportional hazard models as specified in Tables 2 (time-to-recovery) and 7 (length of post-crisis recessions). Hazards refer to a one standard deviation increase in the continuous explanatory variable (PKNPL) and a unit increase in the binary variables (CURRCR and DEBTCR). Hazard plots in the middle measure time-to-recovery in years instead of quarters.

Annex 2: Hazard Plots for Country Conditions: Balance-of-Payments Variables



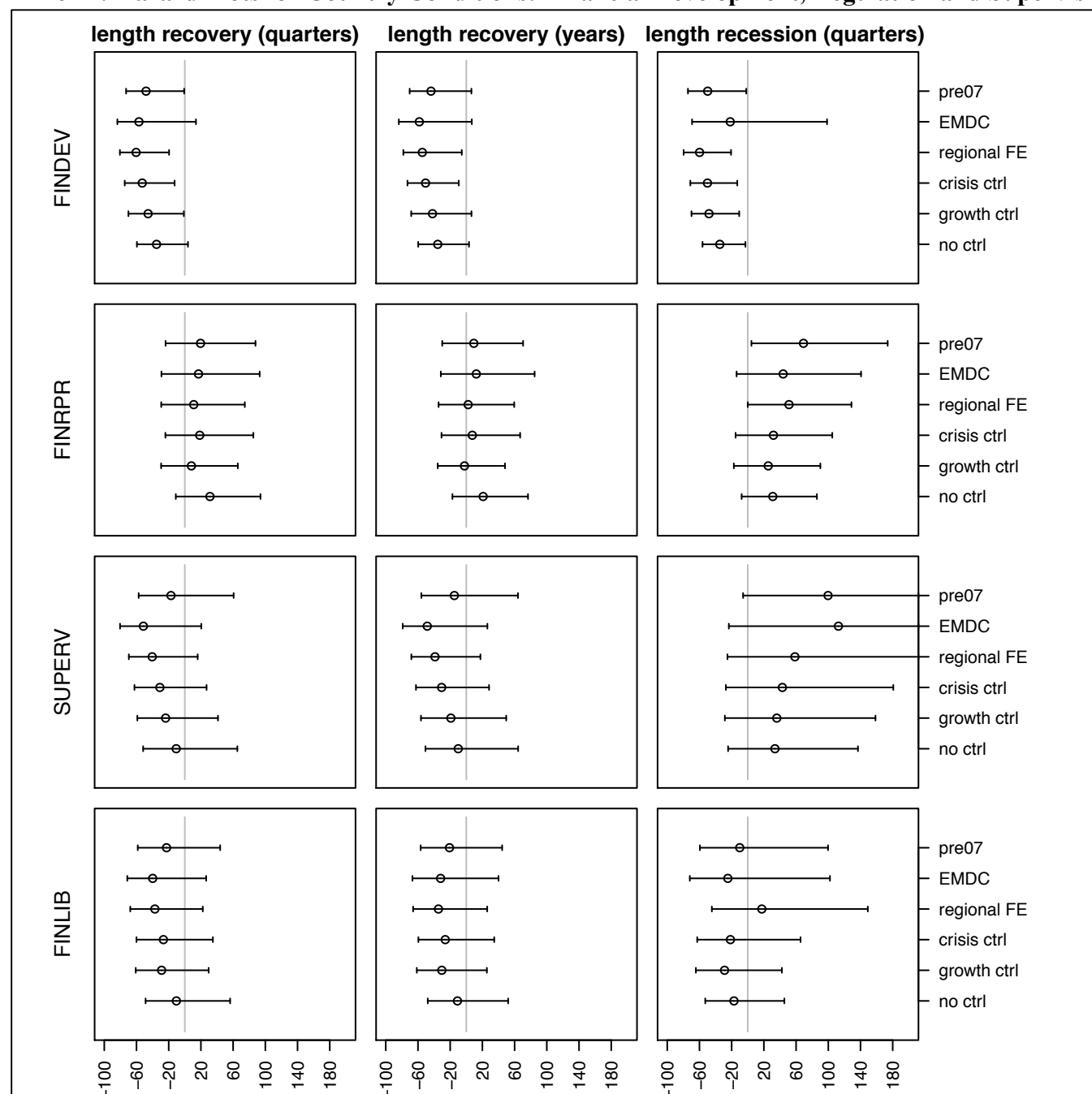
The figure plots hazard rates (i.e. the probability of the occurrence of an event in any given period with respect to a reference group) with 95% confidence intervals as obtained from exponentiating coefficients from Cox proportional hazard models as specified in Tables 3 (time-to-recovery) and 8 (length of post-crisis recessions). Hazards refer to a one standard deviation increase in the continuous explanatory variables and a unit increase in the binary variable (XRFIXED). Hazard plots in the middle measure time-to-recovery in years instead of quarters. Values are cut-off at [-100, 200].

Annex 3: Hazard Plots for Country Conditions: Debt and Inflation



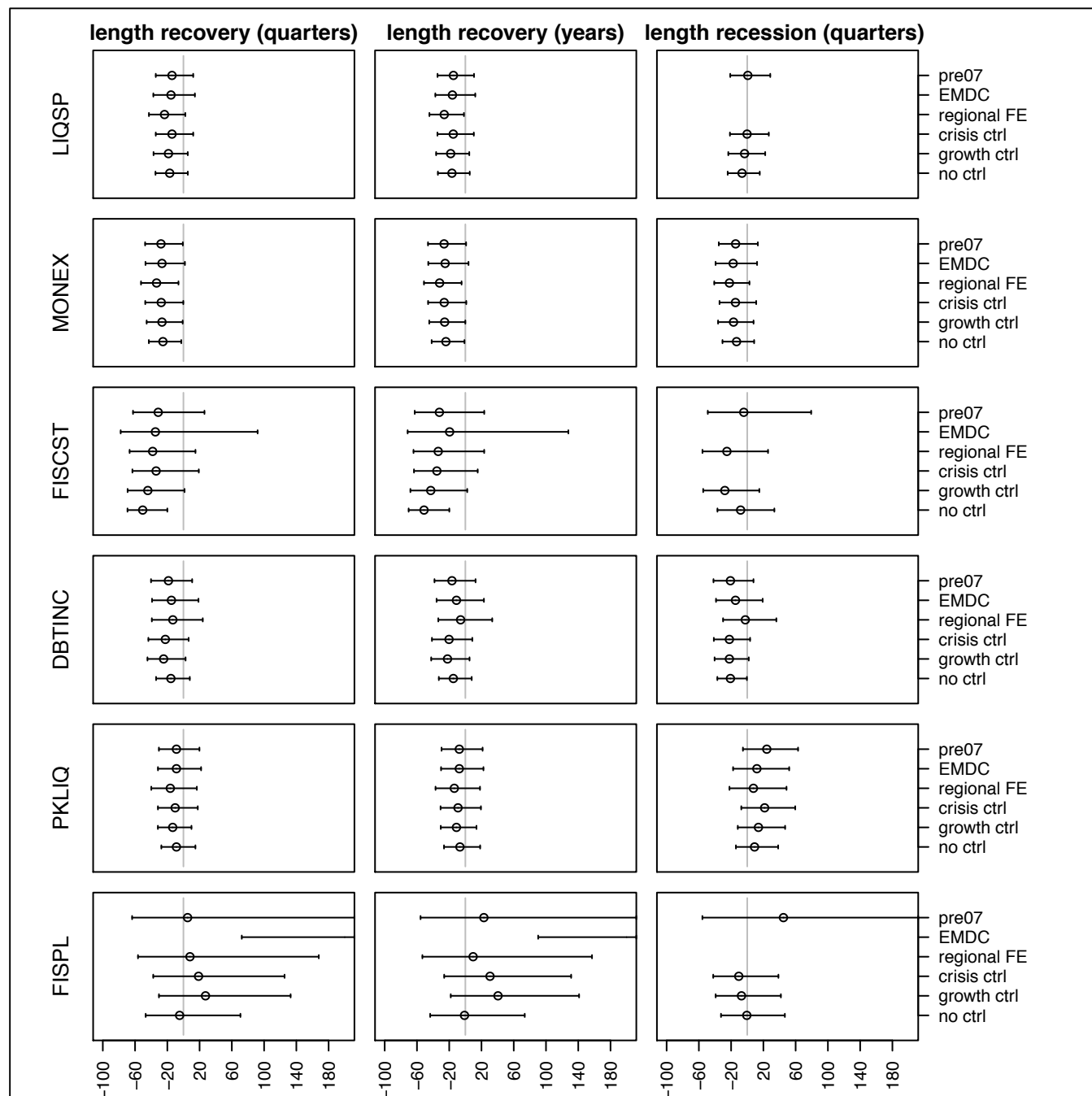
The figure plots hazard rates (i.e. the probability of the occurrence of an event in any given period with respect to a reference group) with 95% confidence intervals as obtained from exponentiating coefficients from Cox proportional hazard models as specified in Tables 3 (time-to-recovery) and 8 (length of post-crisis recessions). Hazards refer to a one standard deviation increase in the explanatory variables. Hazard plots in the middle measure time-to-recovery in years instead of quarters. Values are cut-off at [-100, 200].

Annex 4: Hazard Plots for Country Conditions: Financial Development, Regulation and Supervision



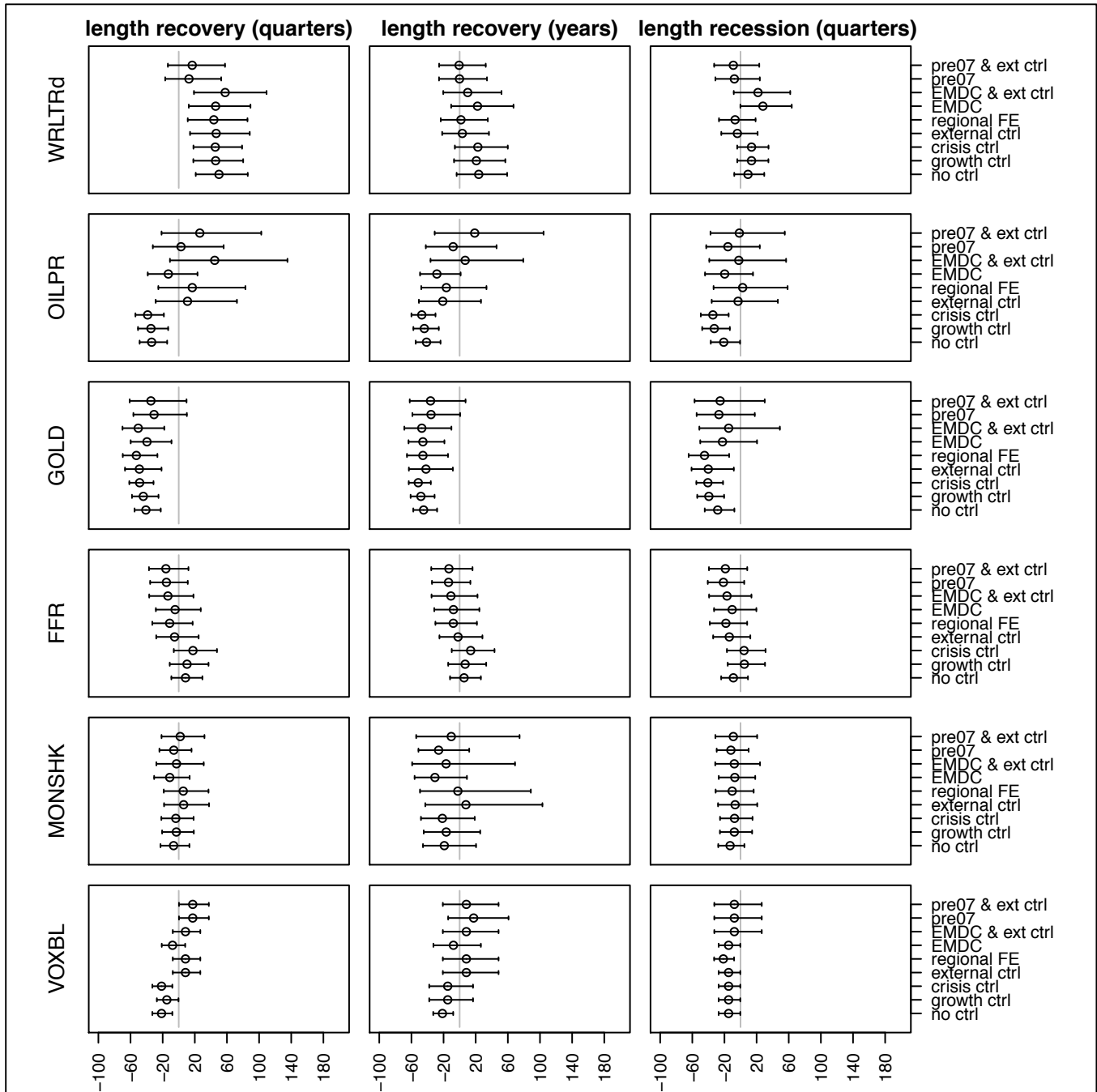
The figure plots hazard rates (i.e. the probability of the occurrence of an event in any given period with respect to a reference group) with 95% confidence intervals as obtained from exponentiating coefficients from Cox proportional hazard models as specified in Tables 3 (time-to-recovery) and 8 (length of post-crisis recessions). Hazards refer to a one standard deviation increase in the explanatory variables. Hazard plots in the middle measure time-to-recovery in years instead of quarters. Values are cut-off at [-100, 200].

Annex 5: Hazard Plots for Crises Policies



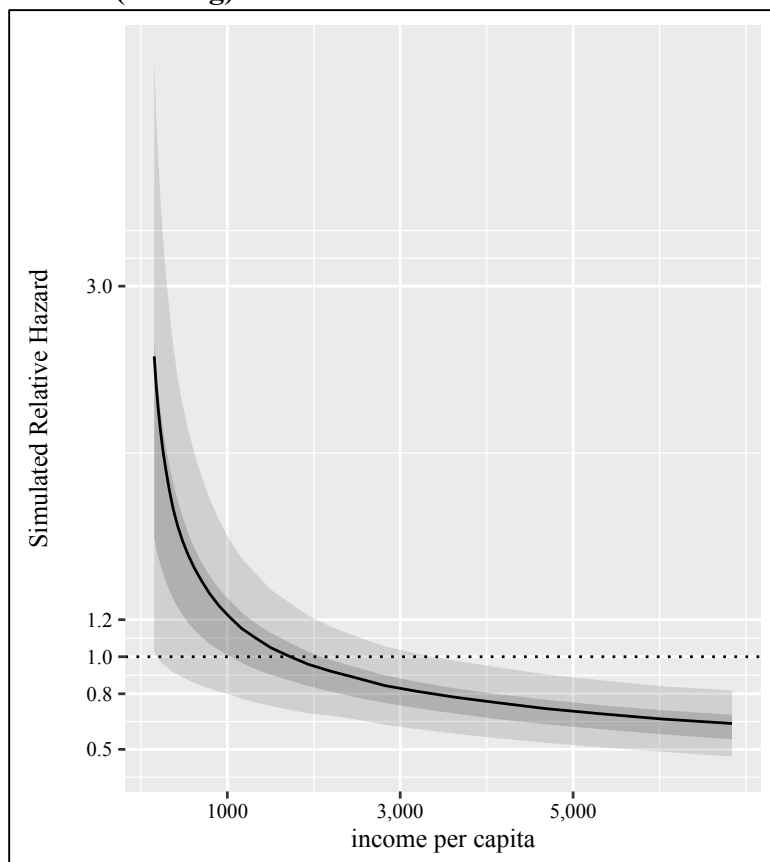
The figure plots hazard rates (i.e. the probability of the occurrence of an event in any given period with respect to a reference group) with 95% confidence intervals as obtained from exponentiating coefficients from Cox proportional hazard models as specified in Tables 4 (time-to-recovery) and 9 (length of post-crisis recessions). Hazards refer to a one standard deviation increase in the explanatory variables. Hazard plots in the middle measure time-to-recovery in years instead of quarters. Values are cut-off at [-100, 200].

Annex 6: Hazard Plots for External Factors



The figure plots hazard rates (i.e. the probability of the occurrence of an event in any given period with respect to a reference group) with 95% confidence intervals as obtained from exponentiating coefficients from Cox proportional hazard models as specified in Tables 5 (time-to-recovery) and 10 (length of post-crisis recessions). Hazards refer to a one standard deviation increase in the explanatory variables. Hazard plots in the middle measure time-to-recovery in years instead of quarters. Values are cut-off at [-100, 200].

Annex 7: Simulated Relative Hazard for the Probability of Exit from Post-Crisis Recessions as a Result of Exogenous Monetary Shocks (MONSHK), Conditional on Per Capita Income (INClog)



Parameters are based on Spec 5 in Table 11, based on the full set of controls for a subsample of emerging markets and developing countries. The plotted effects refer to a one standard deviation increase in exogenous monetary shocks (MONSHK). Hazard rates below 1 indicate that positive monetary shocks are associated with more negative prospects of exiting a recession period. Shaded areas depict 95% (50%) confidence intervals. For the sake of graphical representation, the variable INClog has been transformed back from logs. R-Code for the graphical representation has been adapted from Gandrud (2015).

Annex 8: Data Appendix

CODE	CRISIS YEAR	COUNTRY	RECOV	RCSN	CURRCR	DEBTCR	PKNPL	HUMCAP	INC	GDPTRD	GDPVOL	XPSH	KAOPEN	UNDVAL	XRFIXED	RESRV	DBTGDP	DBTGDPd	FORASS	INFL
ALB	1994	Albania	0.25	0.25	0	0	26.8	8.5	1,359	-0.2	12.9	12.5	0.41	0.70	0	0.11	75.0	-10.2	-0.03	7.8
ARG	1980	Argentina	16.50	10.75	1	0	9.0	7.3	5,361	1.9	5.1	6.9	0.41	-0.78	0	0.06	21.3	1.5	-0.14	NA
ARG	1989	Argentina	2.75	1.75	0	0	27.0	7.9	4,124	-1.4	5.3	10.4	0.16	-0.79	0	0.04	55.8	-0.3	-0.13	NA
ARG	1995	Argentina	2.00	1.00	0	0	17.0	8.6	5,105	2.9	6.7	8.6	0.69	-0.33	1	0.06	35.6	-2.0	-0.20	NA
ARG	2001	Argentina	3.25	1.50	1	1	20.1	8.7	5,179	0.7	6.1	23.4	0.16	0.34	0	0.08	165.0	26.0	-0.70	NA
ARM	1994	Armenia	0.25	0.25	1	0	NA	10.4	610	-10.0	19.6	23.9	NA	1.01	0	0.08	25.3	-16.7	NA	176.0
AUT	2008	Austria	5.25+	1.50	0	0	2.8	9.3	39,895	1.7	2.2	50.1	1.00	-0.59	1	0.05	69.2	0.8	-0.12	0.5
AZE	1995	Azerbaijan	3.50	2.75	0	0	NA	NA	651	-12.8	10.9	29.5	0.16	0.82	1	0.07	11.1	-2.7	-0.35	19.8
BDI	1994	Burundi	18.5+	18.25+	0	0	25.0	1.7	191	0.7	4.9	12.9	0.16	-0.20	0	0.22	95.3	2.4	-0.47	19.3
BEL	2008	Belgium	5.25+	5.25+	0	0	3.1	10.6	37,583	1.5	1.9	73.7	1.00	-0.62	1	0.05	95.7	0.3	0.53	-0.1
BEN	1988	Benin	4.75	12.00	0	0	80.0	1.7	462	3.1	4.9	13.5	0.41	0.34	1	0.01	84.5	3.8	-0.70	NA
BFA	1990	Burk. Faso	0.25	4.25	0	0	16.0	NA	269	4.1	4.5	10.4	0.41	-0.16	1	0.11	32.2	0.2	-0.18	2.2
BGD	1987	Bangladesh	0.25	1.50	0	0	20.0	2.8	262	3.4	1.3	5.6	0.00	0.68	NA	0.04	39.5	1.8	-0.37	7.4
BGR	1996	Bulgaria	0.25	0.25	1	0	75.0	8.9	2,379	-2.5	6.5	58.7	0.22	0.72	1	0.25	96.4	-14.8	-0.44	1058.4
BLR	1995	Belarus	1.50	1.00	0	0	NA	NA	1,519	-6.3	5.8	46.3	0.16	0.77	0	0.03	10.7	NA	-0.04	52.7
BOL	1986	Bolivia	4.75	6.00	0	0	30.0	6.4	800	-0.9	2.3	19.6	0.37	0.15	0	0.12	145.3	-2.0	-1.19	14.6
BOL	1994	Bolivia	0.25	0.25	0	0	6.2	7.3	886	3.2	2.3	22.6	0.55	0.26	0	0.15	81.7	-4.2	-0.67	10.2
BRA	1990	Brazil	3.50	3.00	0	0	NA	4.7	3,999	2.2	4.2	8.7	0.00	0.02	0	0.02	65.7	4.4	-0.25	432.8
BRA	1994	Brazil	0.25	8.00	0	0	16.0	4.7	4,182	2.6	3.5	7.3	0.00	-0.32	0	0.07	36.6	-5.8	-0.16	66.0
CAF	1976	Central Afr. Republic	0.25	17.00	0	0	NA	1.2	491	3.0	2.5	25.2	0.41	-0.42	1	0.05	26.5	1.2	-0.27	NA
CAF	1995	Central Afr. Republic	3.75	10.00	0	0	40.0	3.0	352	-0.2	4.3	21.5	0.16	-0.04	1	0.23	92.1	6.6	-0.72	3.7
CHE	2008	Switzerland	5.25+	5.25+	0	0	0.5	10.6	55,378	1.8	1.9	50.4	1.00	-0.78	0	0.27	49.8	-4.0	1.41	-0.5
CHL	1976	Chile	0.25	0.25	0	0	NA	6.6	2,590	1.6	6.1	20.6	0.41	0.06	0	0.05	58.8	-1.0	-0.56	NA
CHL	1981	Chile	7.25	4.00	1	0	35.6	7.0	3,468	1.7	7.8	19.4	0.00	-0.05	0	0.11	34.0	-5.0	-0.67	NA

CODE	CRISIS YEAR	COUNTRY	RECOV	RCSN	CURRCR	DEBTR	PKNPL	HUMCAP	INC	GDPTRD	GDPVOL	XPSH	KAOPEN	UNDVAL	XRFIXED	RESRV	DBTGDP	DBTGDPd	FORASS	INFL
CHN	1998	China	0.25	0.25	0	0	20.0	6.3	983	9.6	3.7	20.4	0.16	0.50	1	0.15	13.8	1.5	0.00	-1.4
CIV	1988	Cote d'Ivoire	24.5+	7.00	0	0	50.0	2.4	1,131	-0.2	4.7	32.0	0.16	0.09	1	0.00	103.4	4.1	-1.44	1.0
CMR	1987	Cameroon	19.5+	9.00	0	0	65.0	3.7	1,287	4.8	7.0	16.0	0.16	-0.02	1	0.02	29.4	0.3	-0.27	1.7
CMR	1995	Cameroon	0.25	0.00	0	0	30.0	5.0	787	-2.2	3.9	23.4	0.16	0.32	1	0.00	98.3	9.8	-0.86	3.9
COG	1992	Congo, Rep.	8.5+	8.25+	0	0	NA	5.4	1,811	0.9	3.6	42.8	0.16	-0.34	1	0.00	164.7	-0.7	-2.10	4.9
COL	1982	Colombia	3.25	3.25	0	0	4.1	4.9	2,431	4.0	2.3	10.4	0.00	0.15	0	0.09	20.2	1.4	-0.14	19.7
COL	1998	Colombia	1.25	0.75	0	0	14.0	6.5	3,179	2.9	3.1	18.3	0.16	0.00	0	0.09	34.1	3.8	-0.29	10.9
CPV	1993	Cabo Verde	0.25	0.25	0	0	30.0	NA	806	6.8	5.5	15.0	0.16	-0.35	NA	0.10	71.9	3.3	-0.16	3.5
CRI	1987	Costa Rica	0.25	3.25	0	0	NA	6.7	3,041	2.3	4.4	29.3	0.00	0.33	0	0.11	86.1	-4.8	-0.76	20.8
CRI	1994	Costa Rica	0.25	1.75	0	0	32.0	7.1	3,643	5.3	2.0	37.6	0.47	0.07	0	0.09	34.6	-5.9	-0.21	23.2
CZE	1996	Czech Rep.	2.50	2.25	0	0	18.0	12.0	9,847	0.1	5.8	49.8	0.41	0.33	1	0.17	13.1	-1.3	-0.05	8.5
DEU	2008	Germany	2.25	1.00	0	0	3.7	11.7	36,469	0.9	2.5	42.5	1.00	-0.56	1	0.05	74.5	1.7	0.31	0.3
DJI	1991	Djibouti	16.5+	12.50	0	0	NA	NA	1,145	-2.1	3.0	44.5	1.00	0.09	1	0.17	NA	NA	0.54	NA
DNK	2008	Denmark	5.25+	5.25+	0	0	4.5	11.1	48,878	0.8	2.7	47.6	1.00	-0.85	1	0.25	40.7	-0.9	0.03	1.3
DOM	2003	Dom. Rep.	1.75	1.25	1	1	9.0	7.0	3,383	4.9	2.8	42.3	0.45	0.33	0	0.04	36.9	2.7	-0.43	51.5
DZA	1990	Algeria	11.50	10.25	0	1	30.0	4.7	2,544	2.4	3.0	29.1	0.16	NA	0	0.08	71.7	2.2	-0.55	25.9
ECU	1982	Ecuador	12.00	17.50	1	1	NA	6.2	2,649	5.0	4.0	15.6	0.31	0.03	0	0.05	53.0	4.7	-0.42	48.4
ECU	1998	Ecuador	5.25	1.50	1	1	40.0	7.1	2,824	2.3	2.7	26.4	0.47	0.21	0	0.10	93.8	3.0	-0.90	52.2
EGY	1980	Egypt	0.25	0.25	0	0	NA	2.7	647	6.7	4.7	33.4	0.00	0.47	0	0.07	127.6	10.5	-0.74	10.3
ERI	1993	Eritrea	0.25	0.25	0	0	NA	NA	200	17.3	5.5	28.0	NA	NA	NA	NA	NA	NA	NA	NA
ESP	1977	Spain	5.00	6.50	0	0	5.8	5.9	14,501	4.8	2.9	14.2	0.41	-0.09	0	0.09	14.3	0.9	-0.08	19.8
ESP	2008	Spain	5.25+	5.25+	0	0	5.8	10.1	26,738	2.6	2.5	23.9	1.00	-0.42	1	0.02	54.0	1.5	-0.98	-0.3
FIN	1991	Finland	5.00	2.25	0	0	13.0	7.6	26,292	1.7	3.7	26.0	0.82	-0.93	0	0.05	39.4	4.4	-0.40	2.6
FRA	2008	France	5.25+	1.25	0	0	4.0	10.1	34,759	1.3	1.9	23.4	1.00	-0.63	1	0.05	79.2	2.8	-0.14	0.1
GBR	2007	UK	6+	6+	0	0	4.0	11.1	40,231	2.8	1.4	29.4	1.00	-0.56	0	0.02	51.9	1.0	-0.06	3.6
GEO	1991	Georgia	21.5+	5.25	1	0	33.0	NA	1,958	-7.5	16.1	35.7	NA	0.79	0	NA	NA	NA	NA	NA
GHA	1982	Ghana	10.25	5.00	1	0	35.0	4.5	348	-1.5	6.3	5.6	0.00	-0.03	0	0.07	7.1	-0.5	-0.14	122.9

CODE	CRISIS YEAR	COUNTRY	RECOV	RCSN	CURRCR	DEBTR	PKNPL	HUMCAP	INC	GDPTRD	GDPVOL	XPSH	KAOPEN	UNDVAL	XRFIXED	RESRV	DBTGDP	DBTGDPd	FORASS	INFL
GIN	1993	Guinea	3.75	3.50	0	0	45.0	NA	268	4.1	1.2	22.8	0.16	0.47	0	0.03	99.2	-0.1	-0.84	NA
GNB	1995	Guinea-Bis.	0.25	0.00	0	0	45.0	NA	519	4.7	2.9	10.5	0.06	-0.09	0	0.04	322.4	11.1	-1.00	50.7
GRC	2008	Greece	5.25+	5.25+	0	0	14.7	9.9	23,394	3.0	2.8	19.3	1.00	-0.41	1	0.02	129.7	6.2	-0.94	1.2
GUY	1993	Guyana	0.25	0.25	0	0	NA	7.1	844	2.1	5.2	105.0	0.25	NA	NA	0.46	526.8	-15.1	-2.41	NA
HRV	1998	Croatia	1.25	0.25	0	0	10.5	9.1	7,798	3.3	3.6	36.5	0.41	0.00	0	0.13	41.3	3.2	-0.28	4.0
HTI	1994	Haiti	18.5+	16.75	0	0	NA	3.4	NA	NA	NA	9.1	0.41	NA	0	0.07	43.8	-19.6	-0.26	27.6
HUN	1991	Hungary	8.50	5.00	0	0	23.0	8.8	7,448	-0.9	4.5	31.9	0.00	0.20	0	0.12	119.6	1.4	-0.43	22.9
HUN	2008	Hungary	5.25+	5.25+	0	0	13.3	11.7	11,534	2.3	3.6	77.6	1.00	0.01	0	0.35	79.8	4.1	-1.28	4.2
IDN	1997	Indonesia	7.25	2.25	1	1	32.5	4.6	1,235	5.7	6.7	53.0	0.65	1.18	0	0.25	72.5	6.4	-1.55	58.4
IND	1993	India	0.25	0.25	0	0	20.0	3.5	425	5.3	2.1	9.7	0.16	0.55	1	0.07	73.3	-1.2	-0.27	10.2
IRL	2008	Ireland	5.25+	5.25+	0	0	12.9	11.5	48,893	3.7	4.7	90.2	1.00	-0.68	1	0.01	64.4	7.0	-1.01	-4.5
ISL	2008	Iceland	5.25+	4.25	1	0	61.2	10.4	57,618	3.1	4.2	52.9	0.16	-0.48	0	0.32	88.0	10.7	-7.01	12.0
ISR	1977	Israel	1.25	0.50	0	0	NA	9.6	11,220	6.5	4.9	49.6	0.41	-0.07	0	0.21	133.6	14.3	-0.38	50.6
ITA	2008	Italy	5.25+	5.25+	0	0	11.0	9.2	31,190	0.6	2.5	23.7	1.00	-0.51	1	0.06	116.4	2.5	-0.31	0.8
JAM	1996	Jamaica	9.50	5.75	0	0	28.9	8.2	NA	3.4	3.2	39.1	0.82	-0.41	0	0.09	69.4	-12.3	-0.51	9.7
JOR	1989	Jordan	15.50	2.50	1	1	NA	5.7	1,815	2.2	6.3	59.8	0.16	0.13	0	0.27	219.7	NA	-0.92	16.2
JPN	1997	Japan	5.50	12.00	0	0	35.0	10.5	34,163	2.0	2.3	10.8	0.94	-0.84	0	0.06	117.3	8.1	0.30	0.7
KAZ	2008	Kazakhstan	1.25+	1+	0	0	31.9	11.6	4,538	8.6	3.6	42.0	0.16	0.16	0	0.20	10.2	-0.2	-0.40	7.3
KEN	1985	Kenya	0.25	0.25	0	0	NA	4.1	504	4.9	2.9	25.8	0.16	0.34	1	0.06	41.7	2.2	-0.37	2.5
KEN	1992	Kenya	14.50	12.00	1	0	NA	4.8	523	3.5	2.7	38.9	0.00	0.91	0	0.08	82.1	7.4	-0.81	46.0
KGZ	1995	Kirgizstan	1.50	1.00	0	0	85.0	8.9	341	-3.1	11.1	30.7	NA	1.04	0	0.08	51.7	6.9	-0.59	31.9
KOR	1997	Korea, Rep.	2.00	1.25	1	1	35.0	10.5	13,651	6.3	4.5	42.4	0.16	0.00	0	0.14	15.4	1.6	-0.16	7.5
KWT	1982	Kuwait	7.5+	7.25+	0	0	40.0	4.6	NA	-2.9	12.7	59.1	1.00	-0.43	0	0.30	16.5	3.2	2.82	4.7
LBN	1990	Lebanon	0.25	0.25	1	0	NA	NA	3,369	7.4	43.6	13.2	1.00	0.23	0	1.02	66.3	-38.8	-0.42	NA
LBR	1991	Liberia	9.75	5.50	0	0	NA	3.0	155	-13.7	18.0	NA	0.41	0.00	0	0.00	NA	NA	-18.79	NA
LKA	1989	Sri Lanka	0.25	0.25	0	1	35.0	7.6	675	4.2	1.6	30.2	0.16	0.83	1	0.06	93.4	3.0	-0.56	21.5
LTU	1995	Lithuania	0.25	0.25	0	0	32.2	9.2	3,956	-7.4	10.5	50.0	0.94	0.40	1	0.10	11.8	2.0	-0.14	24.6
LUX	2008	Luxembourg	5.25+	0.25	0	0	1.3	10.3	85,530	3.2	4.0	162.0	NA	-0.66	1	0.02	15.3	1.8	0.88	0.4

CODE	CRISIS YEAR	COUNTRY	RECOV	RCSN	CURRCR	DEBTR	PKNPL	HUMCAP	INC	GDPTRD	GDPVOL	XPSH	KAOPEN	UNDVAL	XRFIXED	RESRV	DBTGDP	DBTGDPd	FORASS	INFL
LVA	1995	Latvia	0.50	0.25	0	0	20.0	9.0	3,306	-3.9	11.6	46.8	0.88	0.31	0	0.13	10.7	0.6	-0.08	17.6
LVA	2008	Latvia	5.25+	2.00	0	0	15.9	10.3	8,708	4.8	9.2	43.9	1.00	-0.13	0	0.27	32.9	3.4	-0.87	3.5
MAR	1980	Morocco	2.00	4.00	1	0	NA	1.8	1,270	4.4	3.6	20.2	0.00	0.03	0	0.03	75.4	6.9	-0.63	12.5
MDG	1988	Madagascar	0.25	11.00	0	0	25.0	NA	325	0.4	3.9	18.4	0.16	0.59	0	0.10	159.9	12.5	-0.97	9.0
MEX	1981	Mexico	16.50	7.00	1	1	NA	4.9	7,103	6.3	3.3	15.3	0.24	0.39	0	0.01	47.6	-3.4	-0.37	58.9
MEX	1994	Mexico	3.00	1.75	1	0	18.9	6.5	7,068	1.9	3.8	25.2	0.69	0.20	0	0.05	56.8	0.7	-0.46	35.0
MKD	1993	Macedon	7.25	4.25	0	0	70.0	NA	2,488	-5.5	2.5	38.2	NA	0.12	0	0.05	NA	NA	-0.16	126.6
MLI	1987	Mali	0.25	8.50	0	0	75.0	0.8	310	0.4	6.8	16.4	0.41	0.02	1	0.02	105.9	2.4	-0.98	NA
MNG	2008	Mongolia	1.75	0.25	0	0	NA	8.6	1,249	6.0	4.0	50.3	0.65	0.52	0	0.29	46.6	-6.4	-0.65	6.3
MOZ	1987	Mozambique	0.25	7.25	1	0	NA	1.2	163	-0.3	9.6	8.1	0.00	-0.34	NA	0.08	NA	NA	-1.61	50.1
MRT	1984	Mauritania	21.50	10.50	0	0	70.0	2.1	656	1.9	3.7	59.9	0.16	-0.27	0	0.09	173.5	16.0	-1.88	NA
MYS	1997	Malaysia	4.75	1.50	1	0	30.0	8.4	4,879	7.5	5.3	115.7	0.53	0.17	0	0.36	36.6	-3.8	-0.37	5.3
NER	1983	Niger	29.5+	28.25	0	1	50.0	0.7	365	0.5	8.3	22.9	0.41	-0.05	1	0.06	54.7	8.0	-0.45	8.4
NGA	1991	Nigeria	12.00	11.00	0	0	77.0	NA	572	0.8	7.8	37.5	0.00	-0.76	0	0.04	127.8	-3.8	-1.27	44.6
NGA	2009	Nigeria	0.25	0.25	0	0	30.1	NA	949	9.2	8.9	25.3	0.31	0.04	0	0.10	15.5	-2.6	-0.05	13.7
NIC	1990	Nicaragua	7.00	5.25	1	0	50.0	4.5	937	-1.8	4.3	21.8	0.16	NA	1	0.11	333.7	34.9	-2.91	NA
NIC	2000	Nicaragua	0.25	2.50	0	0	12.7	5.5	1,061	3.7	2.4	19.0	1.00	NA	0	0.07	227.5	1.0	-1.40	6.0
NLD	2008	Netherlands	5.25+	5.25+	0	0	3.2	10.8	42,467	1.6	2.3	68.6	1.00	-0.61	1	0.05	60.8	1.7	0.14	1.2
NOR	1991	Norway	0.25	0.25	0	0	16.4	10.3	45,858	3.0	1.9	37.9	0.41	-1.00	0	0.10	51.1	1.7	-0.06	2.3
NPL	1988	Nepal	0.25	1.50	0	0	29.0	1.8	224	4.1	4.3	11.1	0.16	0.75	0	0.08	53.3	2.8	-0.24	8.8
PAN	1988	Panama	4.25	1.75	0	0	NA	7.3	2,921	0.9	6.3	78.9	1.00	0.02	1	0.02	105.6	4.8	-1.17	0.2
PER	1983	Peru	3.00	2.25	0	1	NA	6.1	2,221	1.5	5.3	19.3	0.24	0.34	0	0.10	56.7	2.2	-0.48	110.2
PHL	1983	Philippines	20.50	4.25	1	1	19.0	6.2	1,115	3.8	4.3	24.0	0.16	0.36	0	0.03	45.8	4.7	-0.59	50.3
PHL	1997	Philippines	2.75	4.50	1	0	20.0	7.6	1,057	3.1	2.6	44.8	0.45	0.51	0	0.15	51.1	-3.6	-0.60	9.3
POL	1992	Poland	0.25	0.25	0	0	24.0	9.1	4,476	-0.3	5.9	21.0	0.00	0.31	0	0.05	67.4	2.0	-0.42	36.9
PRT	2008	Portugal	5.25+	5.25+	0	0	7.3	7.0	18,868	0.9	1.9	28.0	1.00	-0.33	1	0.07	83.7	5.2	-1.21	-0.8
PRY	1995	Paraguay	1.50	9.75	0	0	8.1	6.3	1,621	4.8	2.1	52.7	0.22	-0.04	0	0.11	24.1	-1.1	-0.15	9.8
ROM	1990	Romania	12.75	3.50	0	0	30.0	8.5	3,820	-0.6	6.0	17.6	0.00	NA	0	0.05	2.7	1.7	0.04	230.6
RUS	1998	Russia	0.25	0.25	1	1	40.0	9.9	3,283	-4.9	6.1	43.2	0.00	0.95	0	0.06	88.7	5.0	-0.07	85.7

CODE	CRISIS YEAR	COUNTRY	RECOV	RCSN	CURRCR	DEBTCR	PKNPL	HUMCAP	INC	GDPTRD	GDPVOL	XPSH	KAOPEN	UNDVAL	XRFIXED	RESRV	DBTGDP	DBTGDPd	FORASS	INFL
RUS	2008	Russia	3.00	1.50	0	0	9.6	11.2	6,649	5.5	5.0	27.9	0.47	0.29	0	0.36	11.0	-2.3	0.07	11.7
SEN	1988	Senegal	12.25	9.00	0	1	50.0	2.4	702	2.4	4.2	24.5	0.41	0.14	1	0.01	66.6	-1.8	-0.64	0.4
SLE	1990	Sierra Leone	0.25	9.25	0	0	45.0	2.1	366	0.9	4.5	31.2	0.41	0.82	NA	0.01	139.8	6.6	-1.50	NA
SLV	1989	El Salvador	0.25	0.25	0	0	37.0	4.3	1,756	-0.3	4.6	18.6	0.00	-1.14	1	0.12	55.5	-10.6	-0.32	24.0
SVK	1998	Slovak Rep.	1.50	1.75	0	0	35.0	11.2	8,830	0.0	7.0	61.2	0.16	0.34	0	0.13	22.8	0.3	-0.20	10.6
SVN	1992	Slovenia	1.75	1.50	0	0	3.6	10.8	10,787	-3.8	6.0	58.8	NA	0.02	0	0.06	21.1	NA	0.02	32.9
SVN	2008	Slovenia	5.25+	5.25+	0	0	12.1	11.6	20,707	3.1	4.1	58.2	0.88	-0.33	1	0.02	35.1	1.6	-0.42	0.9
SWE	1991	Sweden	3.00	2.25	0	0	13.0	10.6	30,267	1.8	1.8	28.0	0.69	-1.10	0	0.09	73.3	2.3	-0.23	2.3
SWE	2008	Sweden	2.75	1.00	0	0	2.0	11.8	43,046	2.0	2.9	48.0	1.00	-0.62	0	0.12	42.6	-1.5	-0.11	-0.5
SWZ	1995	Swaziland	0.25	6.00	0	0	NA	5.0	2,100	7.4	6.5	59.4	0.16	0.58	1	0.16	15.7	-0.8	0.24	6.4
TCD	1983	Chad	0.25	0.25	0	0	NA	NA	373	1.0	9.8	18.0	0.16	0.50	1	0.05	25.4	-4.4	-0.32	20.3
TCD	1992	Chad	9.50	8.75	0	0	35.0	NA	450	3.4	10.8	13.3	0.41	0.47	1	0.03	59.1	6.4	-0.55	-8.4
TGO	1993	Togo	2.75	0.50	1	0	NA	4.0	320	1.3	7.8	30.5	0.16	0.25	1	0.10	122.5	10.2	-1.39	39.2
THA	1983	Thailand	0.25	0.25	0	0	NA	3.6	981	6.8	2.1	21.9	0.41	0.37	1	0.06	40.3	3.0	-0.34	0.9
THA	1997	Thailand	5.50	1.75	1	1	33.0	5.5	2,333	6.0	6.9	58.9	0.41	0.42	0	0.26	34.0	3.2	-0.81	8.0
TUN	1991	Tunisia	0.25	3.00	0	1	NA	4.4	2,072	4.3	3.2	39.5	0.41	0.18	0	0.06	55.5	0.8	-0.90	5.8
TUR	1982	Turkey	0.25	0.25	0	0	NA	3.6	3,836	3.8	3.7	12.5	0.16	0.43	0	0.04	32.7	1.4	-0.20	31.4
TUR	2000	Turkey	2.75	1.50	1	0	27.6	6.1	6,119	3.1	5.6	27.4	0.16	0.31	0	0.10	77.9	8.5	-0.43	54.4
UGA	1994	Uganda	2.50	1.00	0	0	NA	3.5	217	6.1	3.1	11.8	0.41	0.14	0	0.08	78.3	-13.6	-0.49	6.6
UKR	1998	Ukraine	1.50	1.75	1	1	62.4	10.2	1,123	-8.9	6.7	53.7	0.16	0.95	0	0.03	61.0	7.2	-0.44	22.7
UKR	2008	Ukraine	5.25+	2.00	1	0	15.5	11.0	2,206	4.7	7.5	46.4	0.00	0.64	1	0.23	35.4	2.1	-0.39	15.9
URY	1981	Uruguay	10.00	4.00	0	0	NA	6.7	4,272	2.4	4.8	14.3	0.71	-0.11	0	0.15	34.6	1.7	-0.22	19.0
URY	2002	Uruguay	2.75	1.25	1	1	36.3	8.1	4,587	1.0	5.3	27.4	1.00	0.09	0	0.17	99.3	12.5	-0.10	19.4
USA	1988	USA	0.25	3.75	0	0	4.1	12.1	31,850	3.1	2.6	8.9	1.00	-0.43	0	0.03	60.3	2.2	-0.06	4.8
USA	2007	USA	5.75	6.25+	0	0	5.0	12.9	45,431	2.6	1.6	12.5	1.00	-0.35	0	0.02	73.3	3.0	-0.24	3.8
VEN	1994	Venezuela	12.00	9.25	1	1	24.0	5.0	5,497	3.1	5.4	27.1	0.16	-0.10	0	0.14	NA	-6.2	-0.08	NA
VNM	1997	Vietnam	0.25	0.25	0	0	35.0	4.9	470	7.7	1.6	44.8	0.22	0.78	NA	0.07	79.3	-10.6	-0.81	7.3
YEM	1996	Yemen, Rep.	0.25	2.00	0	0	NA	1.7	712	5.8	1.4	36.3	0.82	-0.35	NA	0.18	106.5	-2.3	NA	2.2
ZMB	1995	Zambia	8.25	7.50	1	0	NA	6.0	559	0.8	5.0	31.3	0.76	0.16	0	0.07	236.3	4.6	-2.93	43.1
ZWE	1995	Zimbabwe	0.25	8.25+	0	0	NA	6.7	647	3.8	5.7	36.1	0.16	0.74	0	0.10	72.5	7.1	-0.42	21.4

Annex 8: Data Appendix (Second Part)

CODE	CRISIS YEAR	COUNTRY	RECOV	RCSN	PRBAL	FINDEV	FISCST	LIQSP	MONEXP	PKLIQ	DBTINC	FISPL	FINRPR	SUPERV	FINLIB
ALB	1994	Albania	0.25	0.25	NA	3.4	NA	NA	NA	7.6	NA	NA	1.5	0.0	0.40
ARG	1980	Argentina	16.50	10.75	NA	19.0	55.1	62.2	10.6	64.6	33.1	NA	2.0	0.0	0.43
ARG	1989	Argentina	2.75	1.75	NA	12.8	6.0	135.7	10.0	151.6	-21.3	NA	0.0	0.0	0.29
ARG	1995	Argentina	2.00	1.00	-3.14	19.2	2.0	63.0	-0.8	71.4	8.7	NA	3.0	1.0	0.81
ARG	2001	Argentina	3.25	1.50	-15.87	17.9	9.6	22.6	8.2	22.9	81.9	NA	2.0	1.0	0.67
ARM	1994	Armenia	0.25	0.25	NA	5.5	NA	23.0	NA	41.4	NA	NA	NA	NA	NA
AUT	2008	Austria	5.25+	1.50	-4.13	123.7	4.9	7.7	8.3	11.7	14.8	3.1	1.5	3.0	0.93
AZE	1995	Azerbaijan	3.50	2.75	NA	1.1	NA	84.5	NA	127.6	0.9	NA	2.0	0.0	0.43
BDI	1994	Burundi	18.5+	18.25+	-2.27	13.1	NA	18.3	2.6	23.4	10.9	-2.3	NA	NA	NA
BEL	2008	Belgium	5.25+	5.25+	-5.64	96.3	6.0	14.1	8.3	19.7	18.7	6.0	3.0	3.0	1.00
BEN	1988	Benin	4.75	12.00	NA	NA	17.0	48.6	13.0	99.6	5.7	NA	NA	NA	NA
BFA	1990	Burk. Faso	0.25	4.25	0.17	14.1	NA	4.5	2.8	9.4	8.9	5.9	3.0	0.0	0.29
BGD	1987	Bangladesh	0.25	1.50	-5.66	NA	NA	2.8	1.4	26.0	3.5	-0.7	2.0	0.0	0.24
BGR	1996	Bulgaria	0.25	0.25	NA	21.6	14.0	9.9	-2.2	17.3	-30.1	NA	3.0	0.0	0.38
BLR	1995	Belarus	1.50	1.00	NA	5.0	NA	NA	NA	35.8	-16.5	-1.9	1.5	1.0	0.45
BOL	1986	Bolivia	4.75	6.00	-7.70	13.3	NA	25.9	1.7	57.5	-107.3	0.5	2.0	0.0	0.33
BOL	1994	Bolivia	0.25	0.25	-1.82	45.2	6.0	12.9	1.6	31.9	-19.2	0.0	3.0	1.0	0.71
BRA	1990	Brazil	3.50	3.00	NA	21.4	0.0	10.7	7.7	11.3	-22.6	NA	0.0	0.0	0.29
BRA	1994	Brazil	0.25	8.00	NA	38.0	13.2	17.6	-4.3	20.1	-33.8	NA	0.0	0.0	0.33
CAF	1976	Central Afr. Republic	0.25	17.00	NA	NA	NA	10.5	2.5	90.8	-4.8	NA	NA	NA	NA
CAF	1995	Central Afr. Republic	3.75	10.00	-6.79	4.6	NA	20.9	0.7	24.8	-16.3	-3.9	NA	NA	NA
CHE	2008	Switzerland	5.25+	5.25+	0.51	164.6	1.1	3.0	7.6	4.6	-0.2	-1.0	3.0	3.0	0.95
CHL	1976	Chile	0.25	0.25	NA	NA	NA	23.6	1.6	32.2	-69.5	NA	1.0	0.0	0.38
CHL	1981	Chile	7.25	4.00	NA	NA	42.9	52.7	0.5	61.2	87.9	NA	2.0	0.0	0.62
CHN	1998	China	0.25	0.25	-3.70	104.3	18.0	7.2	0.0	62.0	11.2	1.8	2.3	2.0	0.30

CODE	CRISIS YEAR	COUNTRY	RECOV	RCSN	PRBAL	FINDEV	FISCST	LIQSP	MONEXP	PKLIQ	DBTINC	FISPL	FINRPR	SUPERV	FINLIB
CIV	1988	Cote d'Ivoire	24.5+	7.00	NA	36.0	25.0	22.5	-3.3	76.9	13.6	NA	0.8	0.0	0.37
CMR	1987	Cameroon	19.5+	9.00	NA	26.7	NA	40.9	1.0	59.1	18.0	NA	0.8	0.0	0.13
CMR	1995	Cameroon	0.25	0.00	NA	7.7	NA	6.2	0.4	12.3	-1.1	NA	0.8	0.0	0.23
COG	1992	Congo, Rep.	8.5+	8.25+	-12.47	12.3	NA	16.6	1.4	30.7	103.5	-0.9	NA	NA	NA
COL	1982	Colombia	3.25	3.25	-3.81	32.4	5.0	7.7	-0.8	21.1	16.6	NA	0.0	0.0	0.05
COL	1998	Colombia	1.25	0.75	-5.38	32.4	6.3	4.3	0.5	5.1	15.4	0.3	1.0	1.0	0.62
CPV	1993	Cabo Verde	0.25	0.25	NA	17.8	NA	NA	-40.6	4.0	18.2	NA	NA	NA	NA
CRI	1987	Costa Rica	0.25	3.25	NA	16.7	NA	6.1	2.9	20.2	-27.5	NA	1.0	0.0	0.19
CRI	1994	Costa Rica	0.25	1.75	NA	11.0	NA	6.3	1.1	15.2	4.8	NA	2.0	0.0	0.33
CZE	1996	Czech Rep.	2.50	2.25	-3.62	66.5	6.8	4.2	-1.3	12.7	1.8	-8.4	1.5	1.0	0.74
DEU	2008	Germany	2.25	1.00	-3.08	113.0	1.8	3.6	8.3	11.5	17.8	4.0	3.0	3.0	0.90
DJI	1991	Djibouti	16.5+	12.50	-11.44	NA	NA	3.2	NA	5.2	NA	NA	NA	NA	NA
DNK	2008	Denmark	5.25+	5.25+	-2.77	NA	3.1	11.4	1.2	20.1	24.9	5.7	3.0	3.0	1.00
DOM	2003	Dom. Rep.	1.75	1.25	-3.08	23.3	22.0	38.1	6.7	43.4	16.5	0.4	2.3	2.0	0.63
DZA	1990	Algeria	11.50	10.25	3.80	40.0	NA	29.9	-4.7	37.6	19.1	NA	1.5	0.0	0.31
ECU	1982	Ecuador	12.00	17.50	NA	27.1	NA	100.0	-1.7	146.7	24.4	NA	0.0	0.0	0.05
ECU	1998	Ecuador	5.25	1.50	-3.69	34.9	21.7	22.5	-0.5	26.0	9.1	-2.7	3.0	0.0	0.57
EGY	1980	Egypt	0.25	0.25	NA	18.9	NA	22.7	-2.3	66.7	-4.2	NA	0.0	0.0	0.00
ERI	1993	Eritrea	0.25	0.25	6.73	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ESP	1977	Spain	5.00	6.50	NA	73.0	5.6	3.5	NA	7.6	3.8	NA	1.5	1.0	0.45
ESP	2008	Spain	5.25+	5.25+	-11.18	210.0	3.8	6.4	8.3	8.3	30.7	5.2	3.0	3.0	1.00
FIN	1991	Finland	5.00	2.25	-5.76	93.3	12.8	5.5	NA	12.0	43.6	15.4	3.0	0.0	0.76
FRA	2008	France	5.25+	1.25	-7.56	111.2	1.0	7.4	8.3	8.9	17.3	2.7	3.0	3.0	1.00
GBR	2007	UK	6+	6+	-5.09	197.4	8.8	5.6	9.4	9.0	24.4	4.6	3.0	3.0	1.00
GEO	1991	Georgia	21.5+	5.25	NA	NA	NA	NA	NA	NA	NA	NA	0.8	0.0	0.37
GHA	1982	Ghana	10.25	5.00	-4.57	1.4	6.0	0.1	-0.5	0.2	15.5	-4.6	0.0	0.0	0.00
GIN	1993	Guinea	3.75	3.50	-3.99	NA	NA	3.9	NA	14.6	6.7	NA	NA	NA	NA

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GNB	1995	Guinea-Bis.	0.25	0.00	NA	3.7	NA	39.2	11.4	137.3	108.1	NA	NA	NA	NA
GRC	2008	Greece	5.25+	5.25+	-15.60	95.7	27.3	42.3	8.3	44.3	44.5	4.3	3.0	2.0	0.86
GUY	1993	Guyana	0.25	0.25	NA	NA	NA	1.7	-10.5	1.8	-241.0	NA	NA	NA	NA
HRV	1998	Croatia	1.25	0.25	NA	39.0	6.9	3.1	5.2	3.2	14.1	NA	NA	NA	NA
HTI	1994	Haiti	18.5+	16.75	NA	11.8	NA	NA	-5.8	4.8	-119.4	NA	NA	NA	NA
HUN	1991	Hungary	8.50	5.00	NA	34.6	10.0	4.6	4.5	47.0	19.6	NA	1.5	1.0	0.45
HUN	2008	Hungary	5.25+	5.25+	-4.53	NA	2.7	1.3	-0.8	1.4	-0.3	-0.4	2.3	3.0	0.96
IDN	1997	Indonesia	7.25	2.25	-2.29	52.6	56.8	17.2	4.5	23.1	67.6	6.4	2.0	0.0	0.57
IND	1993	India	0.25	0.25	-6.85	22.4	NA	3.6	1.3	4.3	-7.7	-0.9	1.0	0.0	0.24
IRL	2008	Ireland	5.25+	5.25+	-13.94	237.2	40.7	16.3	8.3	20.0	72.8	27.4	3.0	3.0	1.00
ISL	2008	Iceland	5.25+	4.25	-8.58	119.5	44.2	16.8	-2.3	21.2	72.2	5.2	NA	NA	NA
ISR	1977	Israel	1.25	0.50	NA	45.4	30.0	16.5	28.4	43.2	NA	NA	0.0	0.0	0.33
ITA	2008	Italy	5.25+	5.25+	-5.37	109.6	0.3	5.7	8.3	7.7	8.6	3.1	3.0	2.0	0.95
JAM	1996	Jamaica	9.50	5.75	-6.56	18.6	43.9	0.3	7.6	0.4	2.9	5.3	1.0	1.0	0.57
JOR	1989	Jordan	15.50	2.50	-7.50	59.5	10.0	16.1	15.5	20.7	-61.0	1.3	0.8	1.0	0.56
JPN	1997	Japan	5.50	12.00	-5.94	194.9	14.0	1.6	7.2	2.4	41.7	1.3	2.0	1.0	0.81
KAZ	2008	Kazakhstan	1.25+	1+	-1.33	50.6	3.7	5.0	3.3	5.5	9.1	1.8	3.0	2.0	0.62
KEN	1985	Kenya	0.25	0.25	-3.78	17.6	NA	1.9	0.5	2.0	11.0	0.8	0.8	0.0	0.32
KEN	1992	Kenya	14.50	12.00	-11.28	19.5	NA	24.3	7.4	25.2	12.1	2.5	1.5	0.0	0.36
KGZ	1995	Kirgizstan	1.50	1.00	NA	9.0	NA	51.8	NA	286.1	42.9	NA	1.5	1.0	0.60
KOR	1997	Korea, Rep.	2.00	1.25	1.21	62.3	31.2	11.9	-0.4	27.4	9.9	0.6	3.0	1.0	0.67
KWT	1982	Kuwait	7.5+	7.25+	NA	72.9	NA	2.9	2.5	9.6	16.2	NA	NA	NA	NA
LBN	1990	Lebanon	0.25	0.25	NA	NA	NA	2.8	NA	4.4	NA	NA	NA	NA	NA
LBR	1991	Liberia	9.75	5.50	NA	NA	NA	84.2	NA	85.2	NA	NA	NA	NA	NA
LKA	1989	Sri Lanka	0.25	0.25	-7.56	17.7	5.0	2.0	-1.0	8.0	-5.5	NA	0.8	0.0	0.27
LTU	1995	Lithuania	0.25	0.25	NA	11.7	3.1	18.9	NA	27.5	10.8	NA	1.5	1.0	0.60
LUX	2008	Luxembourg	5.25+	0.25	-0.77	197.8	7.7	4.1	8.3	14.7	14.6	6.4	NA	NA	NA
LVA	1995	Latvia	0.50	0.25	NA	7.0	3.0	5.5	NA	9.2	0.4	NA	3.0	1.0	0.81
LVA	2008	Latvia	5.25+	2.00	-7.85	NA	5.6	3.4	-2.7	3.6	28.1	6.0	3.0	3.0	1.00

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MAR	1980	Morocco	2.00	4.00	NA	15.4	NA	8.6	-1.0	22.1	35.6	NA	0.0	0.0	0.05
MDG	1988	Madagascar	0.25	11.00	-6.67	13.5	NA	19.4	1.0	20.2	-25.8	3.0	0.8	0.0	0.27
MEX	1981	Mexico	16.50	7.00	NA	14.2	NA	2.6	5.0	5.3	22.6	NA	0.0	0.0	0.33
MEX	1994	Mexico	3.00	1.75	-4.17	32.1	19.3	15.8	0.4	16.8	16.4	6.0	2.0	0.0	0.71
MKD	1993	Macedonia	7.25	4.25	NA	37.1	32.0	NA	NA	22.3	NA	NA	NA	NA	NA
MLI	1987	Mali	0.25	8.50	NA	13.2	NA	14.8	1.7	50.5	-11.3	NA	NA	NA	NA
MNG	2008	Mongolia	1.75	0.25	-5.20	41.3	4.2	9.4	3.0	10.5	-5.0	8.5	NA	NA	NA
MOZ	1987	Mozambique	0.25	7.25	-6.47	NA	NA	4.2	-36.6	4.2	60.9	NA	0.0	0.0	0.05
MRT	1984	Mauritania	21.50	10.50	NA	NA	15.0	27.7	1.2	48.4	NA	NA	NA	NA	NA
MYS	1997	Malaysia	4.75	1.50	-0.68	155.2	16.4	8.8	4.0	9.7	0.2	1.5	1.0	1.0	0.67
NER	1983	Niger	29.5+	28.25	NA	18.3	NA	14.1	3.5	45.6	25.9	NA	NA	NA	NA
NGA	1991	Nigeria	12.00	11.00	NA	9.5	NA	5.4	7.2	6.6	63.3	NA	0.8	1.0	0.46
NGA	2009	Nigeria	0.25	0.25	-6.65	31.3	11.8	11.7	-0.5	25.3	7.7	5.1	NA	NA	NA
NIC	1990	Nicaragua	7.00	5.25	NA	NA	NA	156.5	NA	195.1	-31.0	NA	0.8	0.0	0.08
NIC	2000	Nicaragua	0.25	2.50	-4.10	23.1	13.6	20.9	3.3	21.8	14.9	NA	2.3	1.0	0.73
NLD	2008	Netherlands	5.25+	5.25+	-5.61	209.5	12.7	3.7	8.3	5.9	26.8	5.9	3.0	3.0	1.00
NOR	1991	Norway	0.25	0.25	-1.85	55.9	2.7	4.2	0.5	16.9	19.2	2.7	2.3	2.0	0.77
NPL	1988	Nepal	0.25	1.50	NA	11.3	NA	3.8	2.1	14.6	11.7	NA	1.0	0.0	0.14
PAN	1988	Panama	4.25	1.75	NA	44.3	12.9	3.2	0.1	3.6	-2.6	NA	NA	NA	NA
PER	1983	Peru	3.00	2.25	NA	8.1	NA	9.7	5.2	16.8	14.3	NA	0.8	0.0	0.23
PHL	1983	Philippines	20.50	4.25	NA	26.9	3.0	1.5	8.4	19.4	44.8	NA	0.8	0.0	0.27
PHL	1997	Philippines	2.75	4.50	-1.35	45.6	13.2	0.7	0.8	1.4	10.4	1.7	3.0	0.0	0.76
POL	1992	Poland	0.25	0.25	NA	18.6	3.5	8.7	-0.7	45.9	-21.6	NA	0.8	0.0	0.46
PRT	2008	Portugal	5.25+	5.25+	-10.17	181.9	0.0	16.7	8.3	18.0	33.6	6.6	1.5	3.0	0.83
PRY	1995	Paraguay	1.50	9.75	-0.04	26.6	12.9	23.8	3.2	27.3	-1.2	2.4	1.5	0.0	0.69
ROM	1990	Romania	12.75	3.50	NA	NA	0.6	NA	6.3	129.1	NA	NA	0.8	0.0	0.08
RUS	1998	Russia	0.25	0.25	-3.84	11.3	0.1	21.1	NA	23.7	-7.1	NA	3.0	1.0	0.76
RUS	2008	Russia	3.00	1.50	-6.31	44.9	2.3	23.9	1.0	24.8	6.4	7.2	3.0	1.0	0.81

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SEN	1988	Senegal	12.25	9.00	NA	27.9	17.0	6.6	2.0	74.7	-14.2	NA	0.8	0.0	0.13
SLE	1990	Sierra Leone	0.25	9.25	NA	NA	NA	0.0	-0.8	0.0	62.9	NA	NA	NA	NA
SLV	1989	El Salvador	0.25	0.25	NA	3.4	NA	11.5	NA	51.6	-29.6	NA	1.5	0.0	0.07
SVK	1998	Slovak Rep.	1.50	1.75	-5.07	52.8	NA	4.8	-1.0	13.0	15.4	-1.6	NA	NA	NA
SVN	1992	Slovenia	1.75	1.50	NA	19.4	14.6	NA	NA	10.0	NA	NA	NA	NA	NA
SVN	2008	Slovenia	5.25+	5.25+	-5.51	91.2	3.6	9.6	8.3	10.2	18.0	4.7	NA	NA	NA
SWE	1991	Sweden	3.00	2.25	-8.95	51.2	3.6	0.2	5.1	3.1	36.2	10.0	3.0	2.0	0.95
SWE	2008	Sweden	2.75	1.00	-0.98	NA	0.7	13.0	6.3	13.2	11.1	3.3	3.0	2.0	0.95
SWZ	1995	Swaziland	0.25	6.00	-0.60	13.7	NA	3.2	-1.0	3.6	2.5	-0.4	NA	NA	NA
TCD	1983	Chad	0.25	0.25	NA	NA	NA	41.3	-0.3	199.3	-7.2	NA	NA	NA	NA
TCD	1992	Chad	9.50	8.75	NA	6.0	NA	41.4	-0.8	120.9	27.1	NA	NA	NA	NA
TGO	1993	Togo	2.75	0.50	-8.34	21.2	NA	1.7	-3.0	6.2	23.8	1.9	NA	NA	NA
THA	1983	Thailand	0.25	0.25	NA	53.0	0.7	2.0	0.3	8.5	15.7	NA	1.5	0.0	0.17
THA	1997	Thailand	5.50	1.75	-6.29	165.8	43.8	4.4	3.9	5.1	42.1	6.9	1.5	1.0	0.60
TUN	1991	Tunisia	0.25	3.00	-2.76	50.7	3.0	15.1	0.1	31.5	4.2	NA	0.8	0.0	0.23
TUR	1982	Turkey	0.25	0.25	NA	17.0	2.5	29.3	2.4	71.7	12.3	NA	0.8	0.0	0.27
TUR	2000	Turkey	2.75	1.50	NA	14.4	32.0	15.2	NA	20.5	15.3	NA	1.5	2.0	0.69
UGA	1994	Uganda	2.50	1.00	NA	3.7	NA	3.9	0.6	7.6	-26.9	NA	1.5	1.0	0.50
UKR	1998	Ukraine	1.50	1.75	5.12	7.2	0.0	3.3	3.4	19.1	6.0	-4.3	1.5	0.0	0.55
UKR	2008	Ukraine	5.25+	2.00	-6.26	76.7	4.5	9.2	1.7	30.1	28.9	2.8	1.5	3.0	0.69
URY	1981	Uruguay	10.00	4.00	NA	50.8	31.2	18.5	3.2	24.6	83.3	NA	2.0	0.0	0.62
URY	2002	Uruguay	2.75	1.25	-2.64	52.8	20.0	7.9	2.0	12.8	37.0	-0.9	2.0	2.0	0.71
USA	1988	USA	0.25	3.75	-3.09	57.0	3.7	0.1	-0.1	0.1	10.5	-0.8	3.0	2.0	0.86
USA	2007	USA	5.75	6.25+	-6.69	63.0	4.5	4.7	7.9	4.7	23.6	6.7	3.0	3.0	1.00
VEN	1994	Venezuela	12.00	9.25	-5.87	NA	15.0	1.6	1.3	2.9	-23.0	NA	1.5	1.0	0.45
VNM	1997	Vietnam	0.25	0.25	-0.13	18.9	10.0	24.8	4.9	64.9	-52.7	NA	0.8	0.0	0.27
YEM	1996	Yemen, Rep.	0.25	2.00	6.97	NA	NA	0.7	-12.4	0.8	-56.7	6.0	NA	NA	NA
ZMB	1995	Zambia	8.25	7.50	NA	7.5	1.4	24.9	-1.7	27.9	36.2	NA	NA	NA	NA
ZWE	1995	Zimbabwe	0.25	8.25+	NA	19.7	NA	5.0	1.9	8.6	20.9	NA	1.5	0.0	0.60