Implementation Guide for the Sovereign Debt Crisis Scenario Set

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Contents

Abbreviations and Acronyms ii

Executive Summary iii

1 Purpose and Scope 1

2 The Crisis Definition and the Scenario Set 1

3 The Constructions Behind the Scenarios 4

3.1 The Fiscal Capacity 4

3.2 The Fiscal Limit and the Measured Shares 5

3.3 The Fiscal Rule on the Projected Path 6

3.4 The Draws, the Stochastic Panels, and the Nested Panel 7

3.5 What a Result Owes to a Construction 9

3.6 The Resolving Capacity 11

3.7 Reproducing the Records 12

4 Reading the Panels 12

5 Shares of Paths and Severity 13

6 The Workbook 15

7 Limitations for Use 16

Bibliography 17

Abbreviations and Acronyms

AI	artificial intelligence
CBO	Congressional Budget Office
G7	Group of Seven
GDP	gross domestic product
WEO	World Economic Outlook

Executive Summary

This guide sets out how the chief risk officer of a global financial institution can implement the scenario set of the macro paper on fiscal capacity and sovereign debt crises in the Group of Seven (G7), in which the market coordinates on the crisis equilibrium of every economy where one exists, with China carried alongside.[1] It states what the scenarios are, the constructions that set their inputs, how their outputs are read, which statistics serve which risk-management use, and where every series is found in the companion workbook, which accompanies this guide. The scenario set covers eight economies over 2026 through 2036: a baseline, a crisis scenario under each of two regimes of U.S. policy, and 14 variant families that remove the Eurosystem's ceiling, add a Bank of Japan ceiling, carry the central banks' announced portfolio run-off, change China's perimeter or price it as a market issuer, add an AI-adoption productivity path with its components, let the primary balance respond to debt, set one short-rate share for all economies, place six economies on their projected primary balances, and take the lower readings of the euro members' short-rate shares. The baseline is the path on the trends of record on which the market does not coordinate on a crisis equilibrium, so that an economy is on its crisis equilibrium in it only in a year in which that equilibrium is the only one. A crisis year is a year the economy spends on the crisis equilibrium of the paper's pricing equation, whether the market coordinates on it while a benign equilibrium exists or the benign equilibrium has disappeared, and the crisis equilibrium is the only one; the distinction matters for use, because the share of paths with at least one year on the crisis equilibrium and the share of paths on which the market coordinates bear on different questions.

Each economy's fiscal capacity is read from its long record, its fiscal limit is evaluated at the mean neutral rate with the short-rate share of its debt and its central bank's share as measured, and its primary balance follows a rule on its projected path; at their 2026 debt the United States, France, and Japan stand inside their crisis zones and the United Kingdom beyond its own. In the central scenarios the United States, the United Kingdom, France, and Japan are on the crisis equilibrium in every year from 2027 under both regimes, and Italy and Germany enter under regime M. Across the paper's 10,000 stochastic paths, the United States spends at least one year on the crisis equilibrium on 54 percent of paths, the market coordinates on 21 percent, and a U.S. credit event occurs on 27 percent; conditional on any crisis-equilibrium year, the median peak 10-year Treasury yield is 12.1 percent and the median 2036 debt ratio 141.7 percent of GDP. Two baselines carry a spread of their own: the United Kingdom's is on the crisis equilibrium in every year and France's from 2032, so year-by-year differences against them read the stress effect net of a spread the reference already carries, and the guide states the readings that avoid it. The workbook carries the full macroeconomic panels of six scenarios (the baseline and the two crisis regimes of the central calibration and their three AI-sensitivity counterparts), the stress deltas with the affected economies flagged, the baseline-property record, the stochastic summaries of all 20 panels, and the records of the constructions, each tab named in Section 6.

[1] Frank Schmid, "Fiscal Capacity and Sovereign Debt Crises in the G7" (2 November 2026). Every quantity this guide states is drawn from that release; the guide estimates nothing of its own.

1 Purpose and Scope

This guide is the implementation companion to the macro paper, written for the chief risk officer of a global financial institution. The macro paper builds and estimates the model; this guide translates its released outputs into use. Every number printed here is drawn from the paper's 2 November 2026 release, the guide estimates nothing, and where the two differ the paper governs. The workbook that accompanies this guide is part of the deliverable, and the guide references its tabs directly; the Drawn_Parameters tab records the upstream release, the classes of value drawn from it, and the digests that identify the 20 stochastic panels and the nested panel, so the provenance of every series is checkable from the workbook alone.

The guide covers three uses: scenario analysis on the deterministic paths, with the caveat that the baselines of two economies carry a spread (Section 4); path-share and severity inputs for risk appetite and stress-test calibration, from the stochastic panels; and the variant scenarios and panels as sensitivity checks on the central readings. It does not cover currency positions, since the paper carries no exchange rate, and it does not cover portfolio mapping, which depends on the institution's book. Section 3 states the constructions that set the scenarios' inputs, at the level an implementation needs in order to reproduce those inputs and to read what a result owes to each; the paper carries the sources, the estimation, and the 14 limitations in full.

2 The Crisis Definition and the Scenario Set

A crisis year, in the paper's definition of record, is a year the economy spends on the crisis equilibrium of its sovereign-pricing equation. Two routes lead there. Where debt lies above the paper's operative boundary of the crisis zone, the smallest debt at which its pricing equation carries a crisis equilibrium, the equation has two stable solutions, and the market can coordinate on the high one; where debt and the rate structure deteriorate further, the benign solution ceases to exist, and the crisis equilibrium is the only one, with no coordination involved. Both routes produce crisis-level pricing, and the paper reports them together as years on the crisis equilibrium, with the coordinated subset beside them. For implementation the distinction carries weight: coordination is the sunspot-driven, self-fulfilling route, and its share responds to the central-bank backstops; the route of sole survival is fiscal arithmetic, and a ceiling, by raising the limit at which the hazard is assessed, removes the state on the paths where the lifted limit crosses the debt and caps its price on the rest.

Table 1 lists the 51 deterministic paths of the release, 37 scenarios and the 14 hazard-free references they are read against, and names the workbook tab that carries each full macroeconomic panel where one is carried. The six panels in the workbook are the central baseline, the two crisis regimes, and the three AI-sensitivity counterparts; the remaining paths are the references, the decompositions, and the variants. The Crisis_Years tab carries the years on the crisis equilibrium of every path, the Variants_Summary tab the shares of paths of every stochastic panel, and the full panels of every path are available from the author.

Table 1: The deterministic paths of the macro paper, the scenarios and the hazard-free references they are read against, and where each is carried in the companion workbook. A path carried as a full macroeconomic panel occupies the named tab; the remaining paths enter through the Crisis_Years and Scenario_Index tabs, and their full panels are available from the author. Source: Schmid, "Fiscal Capacity and Sovereign Debt Crises in the G7" (2 November 2026); author's calculations.

Path	Workbook tab
Hazard-free reference path (the default hazard set to zero), which every scenario reads its relative terms against	summary only
Baseline on the trends of record	Macro_Baseline
Crisis scenario, regime M (U.S. monetary policy active)	Macro_RegimeM
Crisis scenario, regime F (U.S. fiscal policy active)	Macro_RegimeF
Regime M without the Eurosystem's ceiling	summary only
Hazard-free reference, announced run-off	summary only
Baseline, central banks on announced run-off	summary only
Regime M, announced run-off	summary only
Hazard-free reference, China on the general government perimeter	summary only
Baseline, China on the general government perimeter	summary only
Regime M, China on the general government perimeter	summary only
Hazard-free reference, China as market issuer	summary only
Baseline, China priced as a market issuer	summary only
Regime M, China as market issuer	summary only
Hazard-free reference, Bank of Japan ceiling	summary only
Baseline with a Bank of Japan ceiling of one percentage point	summary only
Regime M, Bank of Japan ceiling	summary only
Hazard-free reference, AI sensitivity	summary only
Baseline with the AI productivity path	Macro_Baseline_AI
Regime M, AI sensitivity	Macro_RegimeM_AI
Regime F, AI sensitivity	Macro_RegimeF_AI
Hazard-free reference, AI band low	summary only
AI baseline, capacity channel at band low	summary only
Regime M, AI band low	summary only
Hazard-free reference, AI band high	summary only
AI baseline, capacity channel at band high	summary only
Regime M, AI band high	summary only
Hazard-free reference, AI increment only	summary only
AI baseline, growth increment only	summary only
Regime M, AI increment only	summary only
Regime F, AI increment only	summary only
Hazard-free reference, channel only	summary only
Baseline, capacity channel only	summary only
Regime M, channel only	summary only
Regime F, channel only	summary only
Hazard-free reference, primary balance responding to debt	summary only
Baseline, primary balance responding to debt	summary only
Regime M, primary balance responding to debt	summary only
Regime F, primary balance responding to debt	summary only
Hazard-free reference, one short-rate share	summary only
Baseline, the U.S. short-rate share for all eight	summary only
Regime M, one short-rate share	summary only
Regime F, one short-rate share	summary only
Hazard-free reference, projected balances of the six	summary only
Baseline, the six on their projected primary balances	summary only
Regime M, projected balances of the six	summary only
Regime F, projected balances of the six	summary only
Hazard-free reference, euro members' lower shares	summary only
Baseline, euro members' short-rate shares at their lower readings	summary only
Regime M, euro members' lower shares	summary only
Regime F, euro members' lower shares	summary only

One rule of coordination applies to every economy. In a crisis scenario the sunspot fires in every year from 2027: an economy coordinates on its crisis equilibrium in the first year in which one exists and stays on it while it exists, the United States and every other economy alike, and an economy whose crisis equilibrium ceases to exist is not coordinated again. In a baseline the sunspot never fires, so a baseline carries a crisis year only where the crisis equilibrium is the only one. The two regimes are configurations of U.S. policy. Under regime M the Federal Reserve follows an active Taylor rule bounded at zero and the U.S. primary balance rises with the sovereign spread; under regime F the U.S. fiscal authority does not respond to the spread, the Federal Reserve's rule is passive, and the price level carries the adjustment over the maturity of the debt. The other seven economies keep an active monetary rule and the fiscal rule of Section 3.3 under both.

Table 2 sets out the central outcomes in the baseline and under both regimes. Under both regimes the United States, the United Kingdom, France, and Japan are on the crisis equilibrium in every year from 2027 through 2036; under regime M Italy enters in 2032 and Germany in 2035, and both are on it through 2036; under regime F neither enters; Canada and China carry no such year in any central run. For the United States the regimes differ in the outcome and not in the years: 2036 debt is 195.1 percent of GDP under regime M against 121.2 under regime F, on a baseline of 120.1. Regime F holds the ratio near its baseline through inflation that rises to 9.9 percent in 2036, where under regime M prices fall by 0.8 percent in that year, and the 10-year Treasury yield reaches 13.5 percent in 2036 under regime F against 9.6 under regime M.

The Eurosystem's ceiling of 1.5 percentage points, the only one the central calibration carries, caps the price of the state and does not remove the state from the deterministic paths. Under regime M France is on the crisis equilibrium in every year with the ceiling and without it; Italy is on it in 5 years from 2032 with the ceiling against 9 from 2028 without it; Germany is on it in 2 years from 2035 with the ceiling and without it. The ceiling is available in a year while, in the year before, the primary balance net of the automatic stabilizers stood no more than 1 percentage point of GDP below its projected path and the debt did not exceed the fiscal limit. It binds for France in 2027, for Italy in 2031 and 2032, and for Germany in 2034 and 2035, at a spread of 1.5 percentage points, the final year of each span being the economy's first year on the crisis equilibrium, and it is withdrawn from 2028 for France, 2033 for Italy, and 2036 for Germany; the spreads of the three then stand at 4.2, 4.1, and 3.4 percentage points in 2036. The ceiling's effect on the shares of paths is in Section 5. Japan, whose central bank has had no standing ceiling since yield curve control ended in March 2024, and the United Kingdom, which carries no backstop, are on the crisis equilibrium in every year under both regimes.

Table 2: Central outcomes by economy in the baseline and under each regime, 2027 through 2036, drawn from the macro paper's scenario record: the first year on the crisis equilibrium, the years on it, the subset entered by coordination (the rest are years in which the crisis equilibrium is the only one), the peak 10-year yield in percent, and 2036 debt in percent of GDP on the paper's net-debt readings. A dash marks an economy with no year on the crisis equilibrium. Source: Schmid, "Fiscal Capacity and Sovereign Debt Crises in the G7" (2 November 2026); author's calculations.

Economy	Onset	Years	Coord.	Peak yield	Debt 2036
Baseline					
United States	—	0	0	4.7	120.1
Germany	—	0	0	3.7	75.6
France	2032	5	0	8.1	159.9
Italy	—	0	0	3.8	126.1
United Kingdom	2027	10	0	9.3	170.4
Canada	—	0	0	4.0	34.0
Japan	—	0	0	2.6	136.3
China	—	0	0	3.4	195.7
Regime M					
United States	2027	10	6	9.6	195.1
Germany	2035	2	0	8.3	98.2
France	2027	10	1	10.6	236.7
Italy	2032	5	1	9.1	179.9
United Kingdom	2027	10	0	11.3	213.3
Canada	—	0	0	5.0	65.1
Japan	2027	10	6	8.0	232.1
China	—	0	0	3.9	216.0
Regime F					
United States	2027	10	8	13.5	121.2
Germany	—	0	0	3.7	85.9
France	2027	10	2	9.2	223.8
Italy	—	0	0	3.9	136.2
United Kingdom	2027	10	0	9.6	197.9
Canada	—	0	0	3.6	57.5
Japan	2027	10	7	7.4	225.4
China	—	0	0	3.5	210.9

3 The Constructions Behind the Scenarios

This section states the constructions that set each scenario's inputs: the fiscal capacity, the fiscal limit and the two shares it reads, the fiscal rule, what the stochastic panels draw, and the records that measure what a result owes to each construction.

3.1 The Fiscal Capacity

The fiscal capacity $pb_i^{\max}$ is the largest primary surplus government i can sustain in the model, and the fiscal limit is proportional to it. For seven economies it is read from the record: the largest average of 10 consecutive years of the balance before net interest, in percent of GDP, on a record read from 1950 or from the record's first year where that is later, with every receipt from abroad that the source identifies excluded from the balance in the year it is recorded. The record is the general government's for six of them and the federal government's for the United States, as its debt and its balance are. Table 3 gives each reading with the window that carries it. The windows of the

United Kingdom, France, and Germany lie before 1970, and the other four begin in 1980 or later. The readings of Germany and the United Kingdom are lower bounds on the balance before net interest in their windows, the accounts of those years netting other income with the interest received. China's capacity is not read from a record of surpluses: it is the median ratio of capacity to revenue across the six general-government economies, 4.2 percent of revenue, applied to China's general government revenue of 25.8 percent of GDP in 2024. The first year of the rule is a convention, and a reading is a moment of the realized record: a government that has not needed a larger surplus has not shown that it could not run one.

Table 3: Fiscal capacity by economy, percent of GDP: the largest average of 10 consecutive years of the balance before net interest on each economy's long record, receipts from abroad excluded; the window that carries it; the first year the rule reads on that record; and the support of the capacity's uniform draw in the stochastic panels, 1 percentage point of GDP either side of the reading. China's value is the median ratio of capacity to revenue across the six general-government economies applied to China's own revenue, and no window or first year applies to it. Source: Schmid, "Fiscal Capacity and Sovereign Debt Crises in the G7" (2 November 2026); author's calculations.

Economy	Capacity	Window	Record read from	Support of the draw
United States	1.91	1993 through 2002	1950	0.91 through 2.91
Germany	2.18	1952 through 1961	1950	1.18 through 3.18
France	1.06	1958 through 1967	1950	0.06 through 2.06
Italy	3.27	1993 through 2002	1951	2.27 through 4.27
United Kingdom	1.43	1950 through 1959	1950	0.43 through 2.43
Canada	3.52	1997 through 2006	1950	2.52 through 4.52
Japan	1.31	1984 through 1993	1955	0.31 through 2.31
China	1.09	revenue-scaled	—	0.09 through 2.09

3.2 The Fiscal Limit and the Measured Shares

The fiscal limit is the present value of the capacity at the real interest-growth differential,

$$d^{*}_{i,t} = \frac{p b_i^{\max}}{\varrho_{i,t}}, \qquad \varrho_{i,t} = \frac{r^{\lim}_{i,t} - \bar{g}_i}{100 + \bar{g}_i}, \qquad r^{\lim}_{i,t} = (1 - h_i)\left[\omega_i\,(r^{*}_i + s_{i,t}) + (1 - \omega_i)\,(y_{i,t} - \pi^{e}_{i,t})\right] + h_i\, r^{*}_i, \tag{1}$$

with $d^{*}_{i,t}$ unbounded where $\varrho_{i,t} \leq 0$. Here $\bar{g}_i$ is terminal real trend growth, r^{*}_i the economy's mean neutral real rate, $s_{i,t}$ the sovereign spread, $y_{i,t} - \pi^{e}_{i,t}$ the real 10-year yield, h_i the share of the debt stock the central bank holds, and ω_i the share of the stock it does not hold that pays the short rate. The same two shares set the marginal financing rate of the debt identity, $(1 - h_i)\left[\omega_i\,(i^{s}_{i,t} + s_{i,t}) + (1 - \omega_i)\,y_{i,t}\right] + h_i\, i^{s}_{i,t}$ with $i^{s}_{i,t}$ the policy rate, toward which the effective rate on the stock moves by the fraction $1/m_i$ a year, m_i being the average maturity.

Three properties of equation (1) bear on implementation. The limit is evaluated at the mean neutral rate, a present value discounting at long-run objects, and the neutral rate is fixed for each economy in every scenario and every stochastic path. The two shares are measured for each economy at the end of 2025, bills and short-rate floaters over the stock the central bank does not hold and the central bank's holdings over the stock, each from the debt office's and the central bank's own records; the Federal Reserve's share is the one the CBO's projections carry, China's short-rate share is measured over the whole stock, and its central bank's share is nil. Neither share is fitted

to a published projection and neither is drawn. And the rate side carries the candidate spread on the market-held stock: a higher spread lowers the limit, a lower limit raises the default hazard, and the hazard prices the spread, which is the route through which the pricing equation has a second solution (Section 3.5).

Table 4 gives the shares, the neutral rate, and each economy's position at its 2026 debt. The short-rate shares run from 3.5 percent for China and 4.6 for the United Kingdom to 26.9 for the United States. The lower the share, the more of the limit's rate side is the real long yield, which carries the term premium. The variant that gives all eight economies the U.S. share measures what the measured shares carry: in it France's baseline has no year on the crisis equilibrium and the United Kingdom's has 8 from 2029, against 5 and 10 at the measured shares. For Germany, France, and Italy the share of record is the reading on which the Eurosystem holds no bill and no floater; the lower readings, over the whole stock, are 5.2, 7.2, and 9.6 percent, and the variant at those readings puts France's baseline on the crisis equilibrium from 2031, one year sooner. At their 2026 debt three economies stand inside their crisis zones, the United States, France, and Japan: the 2027 pricing equation has two equilibria, so a crisis is available and coordination selects it. The United Kingdom stands beyond its zone, the crisis equilibrium being the only one, and four economies stand below theirs.

Table 4: The inputs of the fiscal limit that are read by economy, and each economy's position at its 2026 debt: the share of the stock the central bank does not hold that pays the short rate and the central bank's share of the stock, both in percent and both measured at the end of 2025 (China's short-rate share over the whole stock, its central bank's share nil); the mean neutral real rate in percent; net debt in 2026 in percent of GDP; the operative boundary of the crisis zone, the smallest initial debt at which the 2027 pricing equation carries a crisis equilibrium, in percent of GDP (none: under China's administered spread no initial debt searched carries one); and the position, inside the zone where the 2027 equation has two equilibria, beyond it where the crisis equilibrium is the only one, and below it where the benign equilibrium is the only one. Source: Schmid, "Fiscal Capacity and Sovereign Debt Crises in the G7" (2 November 2026); author's calculations.

Economy	Short-rate share	Central bank's share	Neutral rate	Debt 2026	Operative boundary	Position
United States	26.9	14.1	1.01	100.6	97.5	inside
Germany	9.9	28.6	0.09	49.4	178.4	below
France	9.4	19.2	0.09	110.2	68.7	inside
Italy	12.2	18.1	0.09	129.0	167.8	below
United Kingdom	4.6	17.6	1.22	95.5	52.8	beyond
Canada	20.3	11.9	1.76	10.3	165.2	below
Japan	7.2	43.1	−0.20	134.3	125.7	inside
China	3.5	0.0	2.00	135.3	none	below

3.3 The Fiscal Rule on the Projected Path

The primary balance (a surplus is positive) follows

$$pb_{i,t} = \min\left\{ pb_i^{\max},\ pb_{i,t}^{\text{proj}} + b\,(d_{i,t-1} - d_{i,t-1}^{\text{hf}}) + a\,y_{i,t}^{\text{gap}} + c\,s_{i,t-1} \right\}, \tag{2}$$

where $pb_{i,t}^{\text{proj}}$ is the projected primary balance of the year, $d_{i,t-1}^{\text{hf}}$ debt on the hazard-free reference path, $y_{i,t}^{\text{gap}}$ the output gap, a the automatic stabilizers at 0.4 percentage point of GDP per percentage point of gap, and c the response to last year's spread at 0.25 percentage point of GDP per percentage

point. The response b to debt is 0 in the central scenarios and in every stochastic panel, a stated assumption: the paper's panel estimate does not separate the response from zero, and the response is not drawn. A variant sets it at 0.046, the panel estimate on the sample through 2007, and leaves the crisis years of every baseline as they are. Under regime F the responses b and c are zero for the United States.

The projected path is the CBO's current-law primary balance for the United States, between -2.5 and -1.7 percent of GDP over 2027 through 2036, and the 2026 balance held in every year for the other seven: -2.8 percent of GDP for Germany, -2.7 for France, 0.8 for Italy, -1.2 for the United Kingdom, -2.4 for Canada, -1.7 for Japan, and -10.0 for China. A variant places the six other G7 economies on the primary balances the International Monetary Fund's World Economic Outlook (WEO) projects through 2031, held after; in it France's baseline has no year on the crisis equilibrium, and the United Kingdom's is on it in every year as at the center. The Eurosystem's ceiling reads the same path: it holds while last year's balance stands no more than 1 percentage point of GDP below the projected balance of that year.

3.4 The Draws, the Stochastic Panels, and the Nested Panel

A stochastic path draws 13 quantities once and, in each year, the output-gap innovations, the sunspot, and the default draws. Table 5 lists the quantities. One principle governs them: a quantity with a measurement is not drawn, a quantity with an estimate is drawn from the estimate, and a quantity with neither is drawn uniformly on a stated range centered on its central value. The capacity is drawn uniformly 1 percentage point of GDP either side of each economy's reading, with no floor; the supports are in Table 3, the lowest lower end is France's at 0.06 percent of GDP, and none reaches zero. The width is a convenience and does not measure the uncertainty of a capacity. In a panel the sunspot is a shock: in each year it fires with the path's drawn probability, for the eight economies at once, and an economy not on its crisis equilibrium coordinates on it in a year the sunspot fires if one exists. An economy on the crisis equilibrium stays on it while it exists; one whose crisis equilibrium has ceased to exist returns to the benign one and can be coordinated again by a later firing, where the deterministic scenarios do not coordinate it again.

Table 5: The 13 quantities drawn once for each path of a stochastic panel, with the central value each deterministic scenario carries and the distribution of the draw. A quantity with a measurement is not drawn (the short-rate share, the central bank's share); the response of the primary balance to debt and the neutral rate are fixed. The output-gap innovations, the sunspot, and the default draw are the shocks of each year and are not parameters. Source: Schmid, "Fiscal Capacity and Sovereign Debt Crises in the G7" (2 November 2026); author's calculations.

Quantity	Central value	Draw
Fiscal capacity, by economy	reading of Table 3	uniform, 1 percentage point of GDP either side
Bound on the default hazard	0.1	uniform, 0.05 through 0.15
Loss given default	0.4	uniform, 0.25 through 0.55
U.S. convenience yield at the 2026 debt, percentage points	0.25	uniform, 0 through 0.5
Annual probability of the sunspot	0.1	uniform, 0.025 through 0.175
Pass-through of U.S. long rates, by economy	estimate	one standard normal on the standard errors, censored at zero
Regime of U.S. policy	—	regime F with probability 0.5
Trend growth, by economy	projected path	one standard normal common to the eight, scaled by each economy's standard deviation
Dispersion of the fiscal limit, percentage points of GDP	30	uniform, 15 through 45
Persistence of the output gap	0.6	uniform, 0.4 through 0.8
Output response to the real long rate	0.4	uniform, 0.2 through 0.6
Output response to the corporate spread	0.3	uniform, 0.15 through 0.45
Fiscal multiplier	0.84	uniform on its estimated band, 0.50 through 1.17

Table 6 lists the 20 panels of the release. Every panel uses the same parameter draws and the same shocks, so two panels differ by the change the second one carries and by nothing else. Of the panels, six are read statistic by statistic in Section 5; 10 hold one of five drawn quantities at an end of its range on every path; two hold the sunspot's probability at an end of its range; one keeps an economy on the crisis equilibrium only while it is coordinated, a year in which the crisis equilibrium is the only one not being carried forward; and one sets the loss given default at 10 percent on every path, the haircut of the illustration of Blanchard, Martínez-Bruera, and Huertas.

Table 6: The 20 stochastic panels of the release, 10,000 paths each on the same parameter draws and shocks, and, by economy, the share of each panel's paths with at least one year on the crisis equilibrium over 2027 through 2036, in percent. Every panel but the first changes one element of the central configuration: a variant changes a construction; a panel labeled low or high holds one drawn quantity at the low or the high end of its range on every path. Source: Schmid, "Fiscal Capacity and Sovereign Debt Crises in the G7" (2 November 2026); author's calculations.

Panel	United States	Germany	France	Italy	United Kingdom	Canada	Japan	China
Central panel	54	24	77	40	80	10	44	10
No Eurosystem ceiling	54	29	81	46	80	10	44	10
Announced run-off	55	41	86	45	86	10	58	10
China as market issuer	54	24	77	40	80	10	44	39
AI productivity path	52	24	73	38	78	13	43	10
Bank of Japan ceiling	54	24	77	40	80	10	27	10
Sunspot probability, low	44	21	69	36	73	8	31	10
Sunspot probability, high	60	27	82	43	85	11	54	11
Dispersion of the fiscal limit, low	56	22	75	37	79	8	48	10
Dispersion of the fiscal limit, high	53	25	78	42	82	10	42	10
Output-gap persistence, low	54	18	76	38	80	2	43	6
Output-gap persistence, high	54	32	77	43	81	22	47	19
Long-rate response, low	53	17	76	37	80	3	42	6
Long-rate response, high	54	30	77	42	81	17	46	15
Corporate-spread response, low	54	21	76	39	80	7	43	8
Corporate-spread response, high	54	27	77	41	81	14	45	13
Fiscal multiplier, low	54	24	77	40	80	10	44	10
Fiscal multiplier, high	54	24	77	40	80	10	44	10
Selection by coordination alone	54	24	77	40	80	10	44	10
Loss given default of 10 percent	32	3	60	24	59	0	16	4

The nested panel crosses 1,000 parameter draws with 10 shock sequences each, 10,000 paths on random streams of its own, and splits the variance of each outcome into the part that lies between parameter draws and the part that lies between shock sequences under one draw. For the indicator that a path has at least one year on the crisis equilibrium the parameter part runs from 65 percent for France to 85 for Italy and China (the final column of Table 10), with jackknife standard errors of 1.1 through 2.4 percentage points; for the United States it is 74 percent, against 46 for the coordination indicator and 90 for 2036 debt. A share of paths in this guide is therefore, for the larger part, a statement about which parameter values produce the state and, for the smaller part, a statement about the shocks.

3.5 What a Result Owes to a Construction

Three records of the release measure the dependence of the results on the constructions above. The first reads the pricing equation of the United States in 2027 under regime M on a grid of spreads. As constructed it has three solutions: a spread of zero, an unstable solution at 2.28 percentage points, and the crisis equilibrium at 3.14, where the limit stands at 70.3 percent of GDP against the debt the crisis root produces by the end of the year, 105.3. With the limit held at that value the

crisis equilibrium is the only solution; with the limit held at its benign value, which is unbounded, or discounted without the candidate spread, zero is the only solution. The slope of the map at the crisis equilibrium is 0.61 as constructed and 0.02 with the limit held, so the route from the spread through the financing rate and output to debt carries 4 percent of it and the limit's response to the spread the rest. Run whole with the limit discounted without the candidate spread, the model puts no economy on the crisis equilibrium in the baseline or under either regime, the United Kingdom in 2036 excepted. The second solution of the pricing equation rests on the limit's being discounted at the spread being solved for.

The second record gives, for each economy, the capacity at which a run first carries a crisis year (Table 7), from which the distance between a reading and the capacity at which a result changes is read. The capacity of record of the United States, 1.91 percent of GDP, lies 0.83 percentage point of GDP below the largest capacity at which its regime-M run carries a crisis year and 1.10 percentage points of GDP above the largest at which its baseline does.

Table 7: The capacity at which each economy first carries a year on the crisis equilibrium, in percent of GDP, beside its capacity of record: one economy's capacity set from 2027 to each point of a grid from zero through 12 percent of GDP, every other input as in the release, the crossing located by bisection. A run carries a crisis year at every capacity at or below the entry and at none above it; an economy whose capacity of record lies at or below an entry carries crisis years in that run. None: no capacity of the grid carries one (Japan's baseline, and China under its administered spread). Source: Schmid, "Fiscal Capacity and Sovereign Debt Crises in the G7" (2 November 2026); author's calculations.

Economy	Capacity of record	Baseline	Regime M	Regime F
United States	1.91	0.81	2.74	2.66
Germany	2.18	1.05	2.63	1.62
France	1.06	1.72	4.91	3.16
Italy	3.27	1.64	4.69	2.98
United Kingdom	1.43	2.49	6.62	4.27
Canada	3.52	0.37	2.36	1.43
Japan	1.31	none	2.30	1.86
China	1.09	none	none	none

The third record sets the baseline beside the published projections it is not fitted to. U.S. baseline debt in 2036 is 120.1 percent of GDP against the CBO's 120.2, with a root-mean-square difference of 0.41 percentage point over 2027 through 2036 and a largest difference of 0.63; net interest in 2036 is 4.4 percent of GDP against the CBO's 4.6. The model's ratios are over calendar-year GDP and the CBO's over fiscal-year GDP. For the six other G7 economies baseline debt in 2031 stands above the WEO's projected net debt, by 0.6 percentage point for Italy through 28.5 for the United Kingdom (123.1 against 94.5 percent of GDP). The primary balance held at its 2026 value is the largest term of the gap for the United Kingdom and France, at 15.4 and 8.7 percentage points of gaps of 28.5 and 8.0; the United Kingdom's gap also carries the spread on the crisis equilibrium in its baseline, through an interest term of 5.0 percentage points and a growth term of 12.2. For Canada and Japan the largest term is the WEO's own residual between its net lending and the change in its net debt, 7.8 and 9.6 percentage points of gaps of 11.8 and 11.2.

3.6 The Resolving Capacity

For the six economies Table 8 lists, the release solves the capacity that would remove the crisis equilibrium: the smallest capacity that, announced in a given year and held, leaves the economy no year from the announcement on in which a crisis equilibrium exists. Each trial is a run of the whole model, so the limit, the yield, the debt, and the coordination all move with the trial, and each solved value is confirmed by a scan of the capacity over a grid, which establishes that every capacity above it also removes the crisis equilibrium. The requirement rises with the announcement year in every row of the table. For the United States announced in 2027 it is 2.75 percent of GDP under regime M and 2.67 under regime F, against a capacity of record of 1.91; announced in 2033 it is 5.06 and 3.40.

Table 8: The resolving capacity by economy, regime, and announcement year, in percent of GDP, beside the capacity of record: the smallest capacity, on the grid of hundredths, that announced in the year named and held leaves the economy no year from then on in which a crisis equilibrium exists, every trial a run of the whole model. Record: the capacity of record already leaves no crisis equilibrium from the announcement on. Source: Schmid, "Fiscal Capacity and Sovereign Debt Crises in the G7" (2 November 2026); author's calculations.

		Regime M				Regime F			
Economy	Of record	2027	2029	2031	2033	2027	2029	2031	2033
United States	1.91	2.75	3.32	4.10	5.06	2.67	3.04	3.30	3.40
United Kingdom	1.43	6.63	7.76	9.09	10.51	4.28	5.13	6.14	7.24
France	1.06	4.91	5.71	7.01	8.47	3.17	3.71	4.73	5.88
Japan	1.31	2.31	2.84	3.58	4.39	1.86	2.32	2.97	3.70
Italy	3.27	4.70	4.70	4.70	5.08	record	record	record	record
Germany	2.18	2.63	2.63	2.63	2.63	record	record	record	record

Table 9 gives the distribution of the requirement announced in 2027 across 1,000 of the central panel's parameter draws, for each economy the resolving panel covers. For the United States the median is 2.93 percent of GDP under regime M, with a 5th percentile of 1.32 and a 95th of 7.20.

Table 9: The resolving capacity announced in 2027 across the 1,000 parameter draws of the resolving panel, in percent of GDP, for each economy the panel covers: the 5th percentile, the median, and the 95th percentile under each regime, over every draw, a requirement the panel's search range does not reach being solved over a range to 40 percent of GDP. The final two columns count, under each regime, the draws under which no crisis equilibrium exists for the economy from the announcement on, for which the entry is the drawn capacity itself. Source: Schmid, "Fiscal Capacity and Sovereign Debt Crises in the G7" (2 November 2026); author's calculations.

	Regime M			Regime F			No crisis equilibrium	
Economy	5th	Median	95th	5th	Median	95th	M	F
United States	1.32	2.93	7.20	1.32	2.89	7.15	309	320
United Kingdom	1.45	5.90	21.95	1.45	3.93	11.92	112	113
France	1.16	4.41	12.85	1.11	2.86	6.39	99	102
Japan	0.73	2.30	7.80	0.73	2.11	5.95	332	368
Italy	2.52	4.26	16.63	2.46	3.83	9.21	407	521
Germany	1.47	2.86	7.33	1.39	2.45	3.46	494	773

3.7 Reproducing the Records

An implementation that reproduces the release computes the estimation records first, since the model reads its capacities, its shares, and its fiscal multiplier from them; the deterministic paths, each stochastic panel, and the nested panel are then independent computations, and the reported resolving capacities read the solved ones. Every random number of a stochastic panel comes from two fixed seeds, one for the parameter draws and one for the shocks, spawned by chunk and by path, so a path carries the same numbers in whatever order the paths are computed; the nested panel has two seeds of its own. Computed on a second platform, the first 40 paths of the central panel agree with the first platform's in all 16,480 stored values to within 1.2×10^{-11}, against a stated tolerance of 10^{-8}.

4 Reading the Panels

Each Macro tab of the workbook carries seven series for each of the seven economies of record, the G7, and for China, which the upstream paper reports in an addendum because its administered spread places it outside the mechanism the paper measures; the scenario set and the tab structure are the same for all eight, so a downstream pipeline reads the same series for each over 2026 through 2036: real GDP growth, inflation, nominal GDP growth, the policy rate, the 10-year sovereign yield, the output gap in percent of potential, and equity valuation. The paper carries no exchange rate, each economy's real exchange rate against the dollar being taken to stay on its hazard-free path, so the tabs carry no currency series. Equity is a deviation from the paper's hazard-free reference path, not a level, so the baseline tab shows deviations of at most 0.03 percent for the six economies whose baselines carry no year on the crisis equilibrium; the baselines of the United Kingdom and France carry a spread and with it an equity loss against that reference; a crisis tab shows the crisis effect against the same reference, and its difference from the baseline tab is the effect of the event in percentage points of the reference level. As a percentage of the baseline's own level, which the deviation of the equity index in the macro paper's Macro_Long tab carries, the effect is larger wherever the baseline stands below the reference: in 2036 the United Kingdom's baseline stands 52.3 percent below the reference and its regime-M path 68.1 percent below it, a difference of 15.8 percentage points and a fall of 33.2 percent from the baseline's level; France's stand 44.9 and 65.4 percent below it, a difference of 20.4 percentage points and a fall of 37.1 percent. Rates and yields are levels in percent; the output gap is a level in percent of potential.

The Deltas tabs difference each crisis scenario against its baseline, series by series, and are the input a scenario engine reads, with one qualification the workbook flags in its own note column. The baselines of two economies carry a spread of their own. The United Kingdom's is on the crisis equilibrium in every year, the benign equilibrium existing in none, with a baseline spread that rises to 4.1 percentage points and a baseline 10-year yield running from 8.1 through 9.3 percent. France's is on it from 2032, at the Eurosystem's ceiling of 1.5 percentage points, with a baseline 10-year yield running from 3.7 through 8.1 percent. A year-by-year delta against such a baseline reads the stress effect net of the spread the reference already carries: the U.K. regime-M yield delta ranges from 0.2 through 2.0 percentage points across the decade against a regime-M yield between 8.4 and 11.3 percent, and France's from 0.8 through 4.2 percentage points against a regime-M yield between 5.3 and 10.6 percent, so a scenario engine differencing against either reads the increment the scenario adds and not the level of the risk the economy carries, which the level path shows. For those two economies the delta measures what the scenario adds, and the level paths measure what the

economy carries—the crisis scenario's yields, growth, and gap used directly, or differenced against a flat reference of the institution's choosing that is disclosed as such—and the Baseline_Property tab gives the year-by-year root state, spread, and yield of every baseline so the property is visible rather than inferred. The other six baselines carry no year on the crisis equilibrium and price a spread that prints as zero, and their deltas read as stress effects without qualification; two of them, the United States' and Japan's, carry in every year a crisis equilibrium the baseline is not on, which the Baseline_Property tab shows as two roots.

5 Shares of Paths and Severity

The stochastic panel is the input for risk appetite and severity calibration. Its shares are shares of simulated paths under the ranges the paper's assumption tables state, not forecasts and not probabilities estimated from a record: the ranges are chosen for admissibility rather than fitted, the two policy regimes are drawn with equal probability, which no record supports, and a reader holding different ranges obtains different shares. Table 10 carries four statistics per economy from the central panel of 10,000 paths: the share of paths with at least one year on the crisis equilibrium by 2036, the share on which the market coordinates while a benign equilibrium exists, and the median years on that equilibrium across all paths and across the paths with at least one such year. The first bears on risk appetite; the second is the self-fulfilling subset and suits questions about backstop design and contagion; the two medians measure persistence, and the conditional one is the figure a stress window should be sized on, the unconditional median being zero wherever the share of paths with at least one year on the crisis equilibrium is below one half. A fifth column, from the nested panel of Section 3.4, gives the part of the first statistic's variance that lies between parameter draws. The shares of the United Kingdom and France, 80 and 77 percent, the two largest, belong to the two economies whose baselines carry the state on the central path. The drawn trend growth separates their paths: among the paths on which trend growth is drawn above its projected path the share of paths with at least one year on the crisis equilibrium is 61.3 percent for the United Kingdom and 54.9 for France, against 99.6 and 98.6 percent among the rest. China's 10 percent is the share of paths on which the benign equilibrium ceases to exist in at least one year, the administered rate holding the observed spread at zero in those years.

Table 10: Shares of the simulated paths by economy over 2027 through 2036, drawn from the macro paper's central panel of 10,000 paths: the share of paths with at least one year on the crisis equilibrium (Crisis share), the share on which the market coordinates while a benign equilibrium exists (Coordination), the median years on the crisis equilibrium across all paths, and the median across the paths with at least one such year. The final column is drawn from the nested panel of 1,000 parameter draws by 10 shock sequences: the part, in percent, of the variance of the indicator of the first column that lies between parameter draws, the rest lying between shock sequences under one draw. Source: Schmid, "Fiscal Capacity and Sovereign Debt Crises in the G7" (2 November 2026); author's calculations.

Economy	Crisis share, %	Coordination, %	Median years, all paths	Median years, crisis paths	Parameter part, %
United States	54	21	2	9	74
Germany	24	0	0	3	76
France	77	20	8	10	65
Italy	40	3	0	10	85
United Kingdom	80	14	10	10	69
Canada	10	0	0	2	75
Japan	44	25	0	8	67
China	10	0	0	2	85

Conditional on at least one U.S. crisis-equilibrium year, the median onset is 2028, the median years on the crisis equilibrium 9, the median peak 10-year Treasury yield 12.1 percent with a 95th percentile of 18.1, and the median 2036 debt ratio 141.7 percent of GDP with a 95th percentile of 300.4. By regime, the median peak yield is 9.8 percent under regime M and 14.5 under regime F, and the median 2036 debt ratio 188.2 and 118.3 percent of GDP; the pooled medians mix the two regimes, which are drawn with equal probability. The 95th percentile of the debt ratio lies among paths with at least seven years on the crisis equilibrium: of the 269 paths at or above it, 268 are regime-M paths and 190 carry a drawn credit event, which the simulation records without restructuring the debt, so the ratios on those paths are those of a debt on which the event has occurred and has not been resolved. A U.S. credit event occurs on 27 percent of paths, every one of them a path with at least one crisis-equilibrium year, of which they are 51 percent, and a credit event for at least one of the seven other economies on 68 percent. Across all paths, crisis or not, the median 2036 U.S. debt ratio is 119.3 percent of GDP and the 95th percentile 255.8. The Stochastic_Central tab carries the full summary and conditional blocks; a severity calibration that needs quantiles beyond the ones printed here reads them there.

The variants move these statistics in ways that identify what each mechanism carries, and the Variants_Summary tab holds the full set. Removing the Eurosystem's ceiling raises the coordination shares of Germany, France, and Italy—Italy's from 3 to 13 percent—and their shares of paths with at least one year on the crisis equilibrium by 4.5 through 6.5 percentage points across the three, since the ceiling raises the limit at which the hazard is assessed and removes the high root on the paths where the lifted limit crosses the debt; adding a Bank of Japan ceiling of 1.0 percentage points, the variant the paper carries because the Bank has no standing instrument, lowers Japan's coordination share from 25 to 5 percent and its share of paths with at least one year on the crisis equilibrium by 17.3 percentage points. Differences between shares are taken before rounding. The announced run-off of the central banks' portfolios raises Japan's, Italy's, France's, and Germany's shares of paths with at least one year on the crisis equilibrium by 5.2 through 17.2 percentage points and the coordination shares of Japan, Italy, and Germany—Japan's from 25 to 33 percent,

Germany's from 0 to 1—while France's coordination share is lower by 0.2 percentage point, at 19 percent against 20; the U.K. share of paths with at least one year on the crisis equilibrium rises by 5.6 percentage points and the U.S. share by no more than one percentage point. Pricing China as a market issuer raises its coordination share to 33 percent and its share of paths with at least one year on the crisis equilibrium to 39, and leaves the other economies unchanged. The AI-adoption path, a sensitivity of the paper and not its central calibration, lowers the U.S. share of paths with at least one year on the crisis equilibrium from 54 to 52 percent; the coordination share, at 21 percent, and the share with a credit event, at 27, each print alike with and without it; on its deterministic paths U.S. debt ends 2036 at 193.7 percent of GDP under regime M and 114.9 under regime F, against a baseline of 118.2. With the loss given default at 10 percent on every path the U.S. share of paths with at least one year on the crisis equilibrium is 32 percent and its coordination share 1, against 54 and 21 in the central panel. With the sunspot's probability held at the low and at the high end of its range the U.S. share of paths with at least one year on the crisis equilibrium is 44 and 60 percent and the coordination share 7 and 30; across the 10 panels that hold another drawn quantity at an end of its range the U.S. share of paths with at least one year on the crisis equilibrium moves by at most 2.1 percentage points, and Table 6 gives every panel and economy.

6 The Workbook

The workbook is part of this deliverable, and the guide references it throughout. The Log registers every tab. Drawn_Parameters names the upstream release, the classes of value drawn from it, the digests of the 20 stochastic panels and of the nested panel, and the crisis-year definition, and records that this guide estimates nothing. Scenario_Index lists all 51 paths with the tab carrying each full panel where one is carried. Crisis_Years holds the onset, the years on the crisis equilibrium, the coordinated subset, the peak yield, and 2036 debt for every economy on every path. The six Macro tabs carry the full panels of Table 1; the two Deltas tabs difference each regime against its baseline with the rows of the affected economies flagged; Baseline_Property gives, for every baseline, the year-by-year root state, spread, and yield; Stochastic_Central and Stochastic_AI carry the summary and conditional statistics of those panels with their digests; and Variants_Summary carries the share of paths with at least one year on the crisis equilibrium and the coordination share for all 20 stochastic panels. The constructions of Section 3 have a tab each: Capacity, with the windows and the supports of the draw; Limit_Inputs, with the two shares, the neutral rate, the boundaries, and the projected primary balance by year; Draws; Nested_Panel, with the two parts of the variance of every outcome; Limit_Counterfactual; Capacity_Thresholds; Baseline_Comparison, with the terms of each gap; Resolution, with the solved and the reported resolving capacities and the resolving panel's quantiles; and Reproduction. The file of record for the macroeconomic series is the macro paper's companion workbook, which carries them at full precision: its Macro_Long tab holds every scenario, economy, series, and year in one long table with the level and the deviation from the scenario's own baseline side by side for each of its series (the seven of this workbook's Macro tabs, seven more read from the model under their symbols, and three level indices), its Macro_Quarterly tab expands the baseline and the two central regimes to quarters under a stated convention, and its Macro_Definitions tab states the timing convention, the deviation rules, and a note on severity; this workbook carries the same series rounded to four decimals for reading, and its Log says so.

7 Limitations for Use

The paper's 14 limitations govern any use of these scenarios, and the following bear on implementation directly. The fiscal capacities that set the crisis boundaries are 10-year maxima from the record, extreme statistics resting in the U.S. case on one episode, so the boundaries move with the capacity read, the U.S. corner boundary (the closed-form condition; the operative boundary the paths obey lies above it) from 53 percent of GDP at the capacity of record to 83 and 138 at capacities of 3 and 5 percent, and the shares of paths also move with the capacity read; Table 7 gives the capacity at which each central result changes. The neutral rate that enters the limit is fixed at a published estimate for each economy and is not drawn, so the shares of paths carry none of its uncertainty. The Eurosystem's ceiling is an assumption modeled from a charter and announcements that were not tested by purchases at scale, so the shares of paths for Germany, France, and Italy depend on it, and the no-backstop variant shows the shares without it; Japan carries no ceiling in the central calibration, and the Japan-ceiling variant shows the shares with one. The two baselines that carry a spread mean that any automated delta computation must carry the qualification of Section 4; a pipeline that differences every economy uniformly reads for those two the increment the scenario adds, net of the spread their references already price, and not the level of the risk they carry. The central scenarios are conditional on two assumptions, the bound on the default hazard and the loss given default, which together bound the spread: under regime M either at half its central value leaves the United States with no crisis year. The same two parameters set the severity of a crisis, since the hazard is bounded and the high root lies close to the bound on the spread. The central paths are conditional on no credit event: the cumulative probability of a U.S. credit event along the central path is 62 percent under regime M and 59 under regime F, and that of a U.K. credit event 64 percent under either regime. The AI-adoption scenarios are a sensitivity of the paper, not its central calibration, and results drawn from them carry that status.

Bibliography

Schmid, Frank. “Fiscal Capacity and Sovereign Debt Crises in the G7.” Working paper, 2 November 2026.