

related to existing data limitations. Authorities would need to complement the credit gap with additional analysis. An example would be the use of granular information on credit developments. Micro data can provide important insights into the outlook for financial stability. Whenever credit growth is strong, authorities can forensically analyze disaggregated loan data to identify which sectors and industries are borrowing: how much, why, and at what price.

Qualitative information and judgment should also be used to analyze changes in lending standards and credit conditions. Regular meetings between central banks and financial institutions to discuss different views on credit conditions are also helpful. Ultimately, policymakers need to make sure that any credit expansion is healthy, and understand the reasons behind any contraction in lending. Credit deepening must go hand in hand with measures that encourage healthy credit expansion, such as legal frameworks that help create, mobilize, and realize collateral, as well as effective insolvency proceedings.

REFERENCES

- Basel Committee on Banking Supervision (BCBS), 2010, *Guidance for National Authorities Operating the Countercyclical Capital Buffer* (Switzerland: Bank for International Settlements).
- BCBS, 2011, *Basel III: A global Regulatory Framework for More Resilient Banks and Banking Systems* (Switzerland: Bank for International Settlements).
- Borio, C., and Philip Lowe, 2002, Assessing the Risk of Banking Crises, *Bank for International Settlements Quarterly Review*, (December).
- Drehmann, M., and Mikael Juselius, 2014, Evaluating early warning indicators of banking crises: Satisfying policy requirements, *International Journal of Forecasting*, Elsevier, vol. 30(3), pp.759–780.
- Ghosh, A., 2015, Banking-industry specific and regional economic determinants of non-performing loans: Evidence from US states, *Journal of Financial Stability*, Vol. 20, issue C, 93–104.
- International Monetary Fund, 2016a, Financial Integration in Latin America, IMF Policy Paper: <https://www.imf.org/external/np/pp/eng/2016/030416.pdf>
- International Monetary Fund, 2016b, Advancing Financial Development in Latin America and the Caribbean, IMF Working Paper WP/16/81: <https://www.imf.org/external/pubs/ft/wp/2016/wp1681.pdf>
- Lund-Jensen, Kasper, Monitoring Systemic Risk Based on Dynamic Thresholds, 2012, *IMF Working Paper*, 12/159, IMF Working Paper 12/159.
- Mink, M., J. Jacobs, and J. De Haan (2012). Measuring coherence of output gaps with an application to the euro area. *Oxford Economic Papers* 64 (2), 1–20.
- Ramírez de León, F. A., 2012, Crédito al Sector Privado en Republica Dominicana (1997–2011): ¿Existe Evidencia de Racionamiento del Crédito? Serie de Estudios Economicos No. 7, Banco Central de la República Dominicana, Santo Domingo.
- Reserve Bank of India, 2013, Implementation of Counter-cyclical Capital Buffer, (December).
- Samarina, A., L. Zhang, and D. Bezemer (2017), Credit Cycle Coherence in the Eurozone: Was There a Euro Effect? *Journal of International Money and Finance* 77, 77–98.

ANNEX 14.1: HP FILTER METHODOLOGY

The one-sided HP filter used to estimate the long-run trend in the credit-to-GDP ratio solves the following minimization problem:

$$\min_{Trend_t} \sum_{t=1}^T (CTG_t - Trend_t)^2 + \lambda \sum_{t=3}^T (Trend_t - 2Trend_{t-1} + Trend_{t-2})^2$$

which balances the trade-off between the size of the estimated cycles and the variation in trend growth rate, with the smoothing parameter λ establishing the relative weight of each of the two terms: the larger the smoothing parameter, the more importance is assigned to the second term, and therefore the “smoother” the trend series would be. This is consistent with the Basel Committee on Banking Supervision’s guidelines (BCBS 2010 and 2011), although some studies have suggested that a two-sided filter might perform better. Since financial cycles are thought to operate at very low frequencies, the smoothing parameter is usually set at large values. BCBS (2010), based on Borio and Lowe (2002), suggests a smoothing parameter of 400,000.¹

¹This value should be compared to 1,600—the value of the smoothing parameter used for estimating business cycles. The difference between the two reflects the idea that financial cycles are thought to be four to five times longer than business cycles.

ANNEX 14.2: MEASURES OF THE CAPDR CREDIT CYCLE

Following Mink and others (2012) and Samarina and others (2015), let $c_i(t)$ be the credit gap of country i in period t , where the credit gap is the cyclical component measured by the deviation of the logarithm of credit from its trend, and let $c_r(t)$ be the credit gap of the CAPDR region at time t , calculated as the median credit gap for all CAPDR countries. *Synchronicity* between country i and the CAPDR credit cycle at time t is defined as:

$$\rho_i(t) = \frac{c_i(t) c_r(t)}{|c_i(t) c_r(t)|}$$

The *country synchronicity index* assumes value 1 if the credit cycle moves in the same direction as the CAPDR credit cycle (the two credit gaps have the same sign) and -1 otherwise. The CAPDR synchronicity cycle for the seven CAPDR countries can be defined as the average of the synchronicity indexes for each country i at each time t :

$$\rho_i(t) = \frac{1}{n} \sum_{i=1}^n \frac{c_i(t) c_r(t)}{|c_i(t) c_r(t)|}$$

The *CAPDR synchronicity index* is defined on the interval $[0,1]$. It assumes value 1 when all countries' credit cycles move in the same direction as the CAPDR credit cycle (perfect synchronization) and 0 when only half of the countries' credit cycles move in the same direction.

Credit cycle *similarity* is defined as the difference in credit cycle amplitude between country i and the CAPDR credit gap:

$$\pi_i(t) = 1 - \frac{|c_i(t) - c_r(t)|}{\frac{1}{n} \sum_{i=1}^n |c_i(t)|}$$

The index is defined on the interval $[1-n, 1]$, with 1 corresponding to the case of identical amplitude and synchronization of each country credit cycle. The CAPDR region-wide similarity index can be defined as:

$$\pi(t) = 1 - \frac{\sum_{i=1}^n |c_i(t) - c_r(t)|}{\sum_{i=1}^n |c_i(t)|}$$

The index is defined on the interval $[0,1]$. Higher values indicate that the amplitudes of the countries' credit cycles are very similar to those of the CAPDR cycle.

ANNEX 14.3. EARLY WARNING PROPERTIES OF THE CREDIT GAP: RESULTS OF REGRESSION ANALYSIS

Costa Rica

Variables	(1) Δ4 NPL	(2) Δ4 NPL	(3) Δ8 NPL	(4) Δ8 NPL	(5) Δ4 NPL	(6) Δ8 NPL	(7) Δ4 NPL	(8) Δ8 NPL
Credit growth_2y		0.000159* (9.32e-05)		0.000167 (0.000117)	0.000100 (9.46e-05)	9.10e-05 (0.000110)		
GDP growth					-0.000747 (0.0127)	0.0316** (0.0148)	0.000733 (0.0123)	0.0327** (0.0128)
CPI inflation					0.0276 (0.0179)	-0.00300 (0.0214)	0.0108 (0.0191)	-0.0465** (0.0217)
CA/GDP					-0.0446 (0.0281)	-0.0850** (0.0333)	-0.0357 (0.0271)	-0.0673** (0.0288)
Credit gap	0.0265*** (0.00761)		0.0380*** (0.00895)				0.0214** (0.00923)	0.0412*** (0.0103)
Constant	-8.87e-05 (0.000444)	-0.000558 (0.000464)	-0.000169 (0.000541)	-0.000770 (0.000603)	-0.00488** (0.00193)	-0.00859*** (0.00231)	-0.00280 (0.00213)	-0.00332 (0.00242)
Observations	60	59	56	55	59	55	60	56
R-squared	0.173	0.049	0.250	0.037	0.142	0.260	0.203	0.429

Source: Authors' estimates.

Note: CA = current account; CPI = consumer price index; GDP = gross domestic product; NPLs = non-performing loans.

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Dominican Republic

Variables	(1) Δ4 NPL	(2) Δ4 NPL	(3) Δ8 NPL	(4) Δ8 NPL	(5) Δ4 NPL	(6) Δ8 NPL	(7) Δ4 NPL	(8) Δ8 NPL
Credit growth_2y		3.197* (1.671)		8.704*** (2.110)	7.570*** (0.689)	7.327*** (1.766)		
GDP growth					2.136 (2.470)	14.69** (5.703)	8.548 (6.052)	18.78** (6.885)
CPI inflation					-2.052 (1.792)	-15.40*** (4.348)	4.427 (5.974)	-3.349 (6.711)
CA/GDP					0.0115 (0.0156)	0.0292 (0.0365)	0.0427 (0.0394)	0.0704 (0.0444)
Credit gap	2.294* (1.203)		5.350*** (1.664)				4.381* (2.237)	7.210** (2.939)
Constant	0.189 (0.278)	-1.069* (0.588)	0.467 (0.393)	-2.938*** (0.744)	-2.552*** (0.223)	-3.326*** (0.503)	-1.376*** (0.474)	-2.423*** (0.534)
Observations	64	64	60	60	23	19	23	19
R-squared	0.055	0.056	0.151	0.227	0.894	0.764	0.325	0.632

Source: Authors' estimates.

Note: CA = current account; CPI = consumer price index; GDP = gross domestic product; NPLs = non-performing loans.

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

El Salvador

Variables	(1) Δ4 NPL	(2) Δ4 NPL	(3) Δ8 NPL	(4) Δ8 NPL	(5) Δ4 NPL	(6) Δ8 NPL	(7) Δ4 NPL	(8) Δ8 NPL
Credit growth_2y		1.419** (0.695)		3.020*** (0.950)	1.929** (0.784)	4.636*** (1.308)		
GDP growth					-7.226** (3.013)	-8.252 (5.049)	-8.038** (3.091)	-9.848* (5.299)
CPI inflation					11.97*** (3.617)	19.55*** (6.113)	13.65*** (3.673)	22.50*** (6.269)
CA/GDP					-0.000151 (0.000238)	-0.000294 (0.000405)	-0.000114 (0.000237)	-0.000212 (0.000408)
Credit gap	3.993 (4.619)		9.685** (4.842)				4.246** (1.640)	9.536*** (2.883)
Constant	0.128 (0.196)	-0.221 (0.218)	-0.0658 (0.208)	-0.481 (0.305)	-0.499*** (0.138)	-1.227*** (0.236)	-0.252* (0.132)	-0.598** (0.235)
Observations	75	91	71	87	71	67	71	67
R-squared	0.010	0.045	0.055	0.106	0.202	0.284	0.209	0.268

Source: Authors' estimates.

Note: CA = current account; CPI = consumer price index; GDP = gross domestic product; NPLs = non-performing loans.

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Guatemala

Variables	(1) Δ4 NPL	(2) Δ4 NPL	(3) Δ8 NPL	(4) Δ8 NPL	(5) Δ4 NPL	(6) Δ8 NPL	(7) Δ4 NPL	(8) Δ8 NPL
Credit growth_2y		0.0138 (0.0109)		0.0377** (0.0144)	0.00586 (0.0120)	0.0134 (0.0171)		
GDP growth					0.0125 (0.0322)	0.0421 (0.0457)	0.0105 (0.0271)	0.0470 (0.0380)
CPI inflation					0.0180 (0.0447)	-0.000391 (0.0660)	0.0107 (0.0408)	-0.0200 (0.0596)
CA/GDP					0.0357 (0.0295)	0.0138 (0.0413)	0.0249 (0.0250)	-0.00800 (0.0349)
Credit gap	0.0208** (0.0102)		0.0360** (0.0137)				0.0115 (0.00876)	0.0170 (0.0122)
Constant	-0.00463*** (0.000688)	-0.00648*** (0.00154)	-0.00886*** (0.000956)	-0.0139*** (0.00209)	-0.00493*** (0.00179)	-0.0115*** (0.00270)	-0.00393*** (0.00185)	-0.00977*** (0.00275)
Observations	56	56	52	52	44	40	44	40
R-squared	0.071	0.029	0.122	0.120	0.069	0.136	0.103	0.167

Source: Authors' estimates.

Note: CA = current account; CPI = consumer price index; GDP = gross domestic product; NPLs = non-performing loans.

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Honduras

Variables	(1) Δ4 NPL	(2) Δ4 NPL	(3) Δ8 NPL	(4) Δ8 NPL	(5) Δ4 NPL	(6) Δ8 NPL	(7) Δ4 NPL	(8) Δ8 NPL
Credit growth_2y		2.824*** (0.610)		3.703*** (0.837)	1.925** (0.715)	3.464*** (0.968)		
GDP growth					2.715 (3.479)	13.49*** (4.826)	3.526 (3.781)	14.94** (5.624)
CPI inflation					8.491 (5.896)	-9.529 (8.750)	13.52** (6.323)	0.478 (9.931)
CA/GDP					-50.93* (29.59)	-34.70 (40.86)	-53.92 (32.18)	-40.68 (47.61)
Credit gap	4.912*** (1.766)		5.898** (2.490)				1.829 (1.929)	3.454 (2.777)
Constant	-0.0929 (0.137)	-0.957*** (0.219)	-0.139 (0.200)	-1.278*** (0.312)	-1.588*** (0.351)	-1.934*** (0.527)	-1.381*** (0.443)	-1.642** (0.704)
Observations	39	39	35	35	39	35	39	35
R-squared	0.173	0.367	0.145	0.372	0.478	0.503	0.383	0.325

Source: Authors' estimates.

Note: CA = current account; CPI = consumer price index; GDP = gross domestic product; NPLs = non-performing loans.

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Nicaragua

Variables	(1) Δ4 NPL	(2) Δ4 NPL	(3) Δ8 NPL	(4) Δ8 NPL	(5) Δ4 NPL	(6) Δ8 NPL	(7) Δ4 NPL	(8) Δ8 NPL
Credit growth_2y		0.00114 (0.00253)		0.0107*** (0.00350)	0.00282 (0.00502)	0.0139** (0.00545)		
GDP growth					0.00341 (0.0247)	-0.0485* (0.0266)	0.00268 (0.0207)	-0.0345* (0.0172)
CPI inflation					0.0286 (0.0293)	0.0712** (0.0331)	-0.00475 (0.0271)	0.00339 (0.0243)
CA/GDP					0.548 (2.317)	5.271** (2.508)	-2.312 (2.127)	0.899 (1.800)
Credit gap	0.00564 (0.00544)		0.0217*** (0.00759)				0.0309*** (0.00868)	0.0562*** (0.00752)
Constant	-0.000337 (0.000819)	-0.000740 (0.00135)	-0.000764 (0.00116)	-0.00527*** (0.00187)	-0.00470 (0.00299)	-0.00822** (0.00325)	-0.00212 (0.00254)	-0.00106 (0.00220)
Observations	78	74	74	70	42	38	42	38
R-squared	0.014	0.003	0.102	0.122	0.065	0.396	0.297	0.732

Source: Authors' estimates.

Note: CA = current account; CPI = consumer price index; GDP = gross domestic product; NPLs = non-performing loans.

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Panama

Variables	(1) Δ4 NPL	(2) Δ4 NPL	(3) Δ8 NPL	(4) Δ8 NPL	(5) Δ4 NPL	(6) Δ8 NPL	(7) Δ4 NPL	(8) Δ8 NPL
Credit growth_2y		−0.00294 (0.00309)		−0.00246 (0.00448)	0.00326 (0.00463)	0.00631 (0.00723)		
GDP growth					−0.0171** (0.00808)	−0.0107 (0.0130)	−0.0149*** (0.00549)	−0.00905 (0.00827)
CPI inflation					0.00171 (0.0216)	−0.0366 (0.0311)	−0.000125 (0.0204)	−0.0454 (0.0291)
CA/GDP					0.000472 (0.00361)	0.00420 (0.00526)	0.000542 (0.00334)	0.00366 (0.00474)
Credit gap	0.0140* (0.00810)		−0.00458 (0.0126)				0.0172** (0.00751)	0.0345** (0.0131)
Constant	0.00108 (0.000797)	0.000578 (0.000825)	−0.00123 (0.00131)	−0.000264 (0.00121)	0.00330** (0.00124)	0.00178 (0.00202)	0.00506*** (0.00143)	0.00641** (0.00267)
Observations	53	53	51	51	51	48	51	48
R-squared	0.056	0.017	0.003	0.006	0.161	0.091	0.239	0.203

Source: Authors' estimates.

Note: CA = current account; CPI = consumer price index; GDP = gross domestic product; NPLs = non-performing loans.

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Panel Estimates (Random Effects)

Variables	(1) Δ4 NPL	(2) Δ4 NPL	(3) Δ8 NPL	(4) Δ8 NPL	(5) Δ4 NPL	(6) Δ8 NPL	(7) Δ4 NPL	(8) Δ8 NPL
Credit growth_2y		0.0101 (0.0279)		0.0207 (0.0392)	0.000471 (0.0115)	0.00191 (0.0178)		
GDP growth					0.469 (0.368)	1.165 (0.768)	0.380 (0.372)	0.977 (0.768)
CPI inflation					2.589*** (0.764)	2.691* (1.449)	2.276*** (0.779)	1.773 (1.494)
CA/GDP					5.07e−05 (0.000171)	−0.000132 (0.000283)	5.61e−05 (0.000171)	−0.000121 (0.000280)
Credit gap	1.372*** (0.439)		2.860*** (0.548)				0.653* (0.336)	1.231** (0.560)
Constant	0.0229 (0.0527)	−0.00173 (0.0520)	−0.00628 (0.0671)	−0.00214 (0.0750)	−0.272*** (0.0571)	−0.457*** (0.128)	−0.251*** (0.0582)	−0.393*** (0.131)
Observations	425	436	399	410	329	302	330	303
Number of country_code	7	7	7	7	7	7	7	7

Source: Authors' estimates.

Note: CA = current account; CPI = consumer price index; GDP = gross domestic product; NPLs = non-performing loans.

For convenience, references to Central America refer to the IMF subregion Central America, Panama, and the Dominican Republic (CAPDR).

The Central American countries in this group are: Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua.

Standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

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Over the past three decades, countries in Central America, Panama, and the Dominican Republic have experienced a sustained economic transformation. The region has moved away from its rural and agricultural past to a modern and urban present and has significantly integrated its economies regionally and globally. Many factors have shaped the region's economic performance and are expected to contribute to its future development.

This book aims to foster policy dialogue and contribute to the efforts to address the region's unique challenges. First, this volume looks at the region's growth with a view to understanding how structural determinants have contributed to the region's uneven gains and shaped priorities to strengthen the foundations of growth. Next, the book highlights the importance of addressing the region's fiscal challenges and how it can support growth and improve social outcomes. Finally, the book emphasizes the importance of a supportive financial sector for growth, including through financial inclusion and development.

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PUBLICATIONS

Paving the Way to Sustained Growth
and Prosperity in Central America,
Panama, and the Dominican Republic

ISBN: 978-1-48435-384-4



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