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The Use of Key Indicators to Assess Latin America's Long-term Economic Performance

Stefanie Garry
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UNITED NATIONS

ECLAC

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Contents

Abstract	5
I. Introduction	7
II. Key objectives of macroeconomic statistics and the relevant indicators for measuring performance	9
III. The Latin American Performance Index (LAPI)	11
A. Application in Latin America.....	13
B. Sensitivity analysis.....	14
C. Scope of the LAPI.....	17
IV. Examples of the application of the LAPI	19
A. Comparison across time	19
B. Comparison across countries.....	20
C. Drivers of the recent economic outlook	22
V. Conclusions and the future outlook	27
Bibliography	29
Serie Studies and perspectives - Mexico: issues published	31

Tables

TABLE 1	CHILE 1997-2003: CONTRIBUTION OF COMPONENTS UNDER ALTERNATIVE BENCHMARKS FOR GDP GROWTH	16
TABLE 2	CENTRAL AMERICA AND THE DOMINICAN REPUBLIC: LAPI AND THE CONTRIBUTION OF EACH COMPONENT TO THE INDEX, 2006-2012.....	21

Figures

FIGURE 1	LAPI IN CHILE, 1991-2012.....	13
FIGURE 2	CHILE: LAPI USING ALTERNATIVE BENCHMARKS FOR THE CENTRAL GOVERNMENT PRIMARY BALANCE, 1991-2012.....	14
FIGURE 3	CHILE: LAPI USING ALTERNATIVE BENCHMARKS FOR GDP GROWTH, 1991-2012	16
FIGURE 4	MEXICO, 1991-2012.....	20
FIGURE 5	CENTRAL AMERICA AND THE DOMINICAN REPUBLIC, 2006-2012	21
FIGURE 6	LATIN AMERICA: RECENT ECONOMIC PERFORMANCE IN SELECTED MAJOR ECONOMIES, 1996-2012.....	23
FIGURE 7	LATIN AMERICA: RECENT ECONOMIC PERFORMANCE BY COMPONENT IN SELECTED MAJOR ECONOMIES, 1996-2012.....	12

Abstract

The importance of official national statistics, and in particular key indicators, for monitoring economic progress, providing a diagnostic of social development, and shaping political priorities cannot be understated. Official statistics, when compiled according to standardized international definitions and benchmarks, allow for the comparative analysis of economic and social performance across countries and help keep governments accountable. Through the astute analysis of official statistics, we can gather a more complete picture of the economic performance of a given country, and understand more fully what have been its drivers, leading to a more effective use of national resources and a more efficient design of policy options.

However, the myriad of information and numerical data across the system of macroeconomic statistics can be challenging to interpret in a straightforward manner. In order to synthetically assess economic performance across countries in Latin America we propose the use of a composite indicator, which builds upon the methodology of Khramov and Lee (2013) and incorporates key indicators from each of the pillars of macroeconomic statistics: the System of National Accounts, the Balance of Payments Statistics, Monetary and Financial Statistics and Public Finance Statistics. Through a composite examination of key statistical indicators in each country across their long-term trends, we can more fully understand the underlying macroeconomic dynamics.

We find that in general over the last two decades, the Latin American Performance Index captures major economic shocks and periods of robust performance across countries. Due to the construction of the index we can efficiently measure which key indicators are shaping overall economic performance and driving growth. The LAPI has been tested for sensitivity analysis. While its usefulness as a tool to analyze the macroeconomic dynamics of a country, or group of countries in comparative perspective is robust to alternative benchmark values, care should be exercised when selecting the time frame for the estimation of the relative weights of each component.

I. Introduction

In this paper we analyze the use of key indicators to assess macroeconomic performance with a focus on the countries of Latin America. We draw inspiration from the wealth of international statistics available through the system of macroeconomic statistics, and seek to synthesize their interpretation through the use of a composite indicator. The importance of official national statistics is presented firstly through the discussion of the main components of the integrated system of national statistics, and secondly through the construction of a composite index herein identified as the Latin American Performance Index (LAPI). The richness of available statistics is critical for monitoring national level economic progress, shaping political priorities, and for providing a diagnostic of countries economic and social development. Official statistics, when compiled according to standardized international definitions and benchmarks, also allow for the comparative analysis of economic and social performance across countries (OECD, 2005; IMF, 2007).

A well constructed system of national statistics also allows researchers, policy makers, academics and the broader public, to understand more clearly the dynamics of economic progress in a particular country, region, or locality. Statistical data that are published freely, timely, and regularly also help to keep governments accountable to their citizens. Through the astute and careful analysis of official statistics, we can gather a comprehensive picture of the recent economic performance of a given country and understand more fully what have been its drivers.

The realm of international statistics is understandably complex, and definitions, coverage and indicators do tend to vary across countries, introducing a certain level of interpretation bias and difficulty for many statistical users. What is needed at times is a simple, concise and easily interpreted index or composite indicator that captures the economy's overall health. Drawing methodological inspiration from the Economic Performance Index (EPI) proposed by Khramov and Lee (2013), we have crafted a relatively straightforward indicator, adapted for Latin America, which as the results presented herein show, captures the major economic developments across time, and also enables the identification and comparison of various input factors that are driving performance. Therefore, the objective of the study is to provide a tool which facilitates the evaluation of economic performance in Latin America.

The paper is organized according to the following structure: Section II discusses the main objectives of the system of macroeconomic statistics, by examining the integrated formulation of the System of National Accounts, the Balance of Payments Statistics, Monetary and Financial Statistics, and Public Finance Statistics. Taken together, these pillars comprise the international system of statistical information and provide a wealth of information for countries to monitor and be accountable for their performance. Through the identification of selected key indicators from each of the main pillars of the system of macroeconomic statistics, analysts can begin to understand the necessary inputs for conducting a more nuanced analysis of overall macroeconomic development.

Section III presents the methodological framework of the LAPI. Drawing upon the theoretical foundation of the EPI, we have constructed a modified index that measures the overall economic performance of the region's economies, as compared to their long-term trend. By capturing key indicators from each of the pillars of macroeconomic statistics, the LAPI serves as a concise and easily understandable snapshot of economic progress. In this section we explore the robustness of the indicator to the choice of alternative benchmarks. In Section IV, we illustrate the use of the index for macroeconomic analysis through the comparison of different historical episodes for the same country, the analysis of a common episode in comparative perspective across countries, and demonstrate the possibilities for conducting a deeper analysis of the recent macroeconomic outlook across key countries in the region. Finally, section V provides a summary and conclusion of the main findings of our research, and closes with a set of considerations for future work.

II. Key objectives of macroeconomic statistics and the relevant indicators for measuring performance

Accurate, timely, and relevant statistical information is necessary to assess and monitor progress toward social and economic development goals (ECLAC, 2010). As we have noted, statistics are a fundamental input for individual and collective decision making at local, national and international levels. Data and information can serve as key tools for good governance, keeping politicians, policy makers and the public informed and accountable for their actions. They can help to set quantitative targets for national policy and allow for a more precise evaluation of programs and progress toward goals.

Macroeconomic statistics are also essential for making cross-country comparisons. To enhance the availability and comparability of statistics, international institutions play a key role by performing two main functions. First, they issue methodological guidelines so that individual countries can follow uniform rules to arrive at broadly comparable results. Second, they codify the accounting rules for macroeconomic statistics with the aim of providing a harmonized structure and system of reporting. Standardization also allows for greater and more effective international comparisons and monitoring (OECD, 2005).

Macroeconomic statistics rest on four pillars: the System of National Accounts, Balance of Payments Statistics, Monetary and Financial Statistics, and Government Finance Statistics, which when viewed as an integrated system, comprise the structure of national statistics. These accounts highlight the relationships between the main sectors of the real economy and allow for the monitoring of recent economic developments. An important feature of the sets of macroeconomic statistics is the use of the same core concepts. Although the specific needs of each set of accounts preclude full integration across systems, linkages across the systems reflect many common features, which when viewed together give a fuller diagnostic of the performance of a national economy at a given time.

The System of National Accounts (SNA) provides a comprehensive and systematic framework for collecting, presenting, and analyzing macroeconomic statistics. The framework presents details about how an economy works and how economic agents interact. The SNA enables users to analyze the production and use of goods and services and to measure gross domestic product (GDP). It enables users to analyze the incomes generated by that production, earned from the ownership of assets and to see how

they are redistributed within the economy. It also allows users to identify the capital and financial flows that take place. In summary, it provides information not only about economic activity but also about the levels of an economy's productive assets and the wealth of its inhabitants. Within the SNA the following key indicators emerge as important statistical components, the level and growth rate of GDP (including by component and by type of economic activity), the level and growth rate of per capita GDP, unemployment rates, employment rates, and remuneration.

Following a similar structure to the SNA, the Balance of Payments Statistics (BOP) cover all economic activity with non-residents. These include three types of BOP accounts: the current account, which records transactions with non-residents in goods and services, income, and current transfers; the capital account, which records transactions in capital transfers and non-produced non-financial assets; and the financial account, which records transactions in external financial assets and liabilities. One of the most important features of the BOP is the information presented in the current account, which helps to give a succinct diagnosis of the country's relationship with the international community. In terms of relevant key indicators from within the BOP framework, perhaps the most important are the current account balance (often reported as a share of GDP), the capital account balance, exports of goods and services, imports of goods and services, national income and expenditure, and their components. Figures reflecting the level of current transfers to a country, including remittance flows and foreign direct investment are also easily gleaned from the BOP framework.

The third pillar of the national statistical system is the set of the Monetary and Financial Statistics, which consist of a comprehensive set of stock and flow data on the financial and non-financial assets and liabilities of an economy's financial sector. Primary indicators from the monetary and financial statistics provide important information on monetary aggregates, information on the level of credit to various sectors, and the level of foreign financial assets and liabilities. In addition, they provide valuable links to government finance and the BOP. They are often available on a more frequent basis than other sets of macroeconomic statistics. Monetary and financial data are important for the analysis, formulation and implementation of monetary and macro prudential policy. In this regard, key indicators include monetary aggregates, the leading interest rate or monetary policy rate, the level of credit and credit growth in a given economy, as well as indicators of the health of the financial system.

Public Finance Statistics comprise the final pillar of the integrated system of national statistics. Economists and statisticians have long found it useful to separate the activities of government from those of the rest of the private sector, in order to see a clearer snapshot of the health of national treasuries and gather more detailed information on public policy related expenditures. From the set of Public Finance Statistics, perhaps the fiscal balance, that is the sum of revenues minus the sum of expenditures, and the level of national debt are the most relevant for macroeconomic analysis in a broad sense. Included in this set of key indicators would be the level of tax revenues and components, public income and expenditure, internal debt, external debt, debt service, etc. It is also important to note the scope of public finance statistics, which may be measured at the central or federal government level, as well as at state, local or other levels of sub-national government.

Based on the large set of relevant statistical indicators captured by the set of macroeconomic statistics, we can construct a matrix of available information that details the actual performance of a given economy over a specified period of time, as well as capture and analyze shifts in performance over a long or short-term time frame. However, despite the abundance of statistics available today, many individuals including policy makers, business leaders and members of the larger public, remain confused about the proper way to understand and interpret economic data. Therefore, many people are unable to properly assess their country's economic performance. A consistent and transparent indicator of overall economic performance could help to guide economists, policy makers and the general public in making more informed decisions by providing the big picture of the economy. This is where the role of composite indicators emerges, allowing for the overall health of an economy to be diagnosed in a single headline figure. From the large panel of available statistical indicators presented in this section, the creation of a composite index (drawing on indicators from the majority of each key pillar of economic statistics) helps to simplify and condense a large amount of numerical information into a powerful diagnostic figure.

III. The Latin American Performance Index (LAPI)

In a recent working paper, Khramov and Lee (2013) proposed a synthetic indicator for assessing the economic performance dynamics of the United States. The objective of their Economic Performance Index is to provide a single, simple, yet informative metric to assess the general macroeconomic performance of a nation in a methodologically straightforward and intuitive way. In its original formulation, the indicator measures the activity of the economy's three primary institutional sectors: households, firms and the government by looking at the evolution of GDP growth, consumer price inflation, unemployment and the government fiscal balance. The index is given by the weighted sum of deviations of each indicator from a given benchmark, where the weights reflect the relative importance of each of the components.

Our proposed index builds upon the methodology of the EPI. However, in order to make the indicator relevant for the analysis of the evolution of the economies of Latin America we modify the index along the following dimensions:

In contrast to the United States, the economies of Latin America are relatively small. Coupled with their high level of integration into the world economy, this means that developments in the external sector heavily influence their macroeconomic performance, particularly through trade flows and in many instances through remittances flows. In light of this, drawing from the Balance of Payment Statistics we include the current account balance —expressed as a proportion of nominal GDP— as an additional input. From a macroeconomic perspective, the relevance of the current account balance is that it summarizes the transactions of the domestic economy with the rest of the world and provides a summary measure of changes in the investment position of a given country.

While the recent financial crisis highlighted the vulnerability of the world economy to imbalances in the financial sector, several countries of Latin America have experienced domestic financial crises in recent memory. The main challenge to incorporate this dimension into our index is the broad availability of information contained in the monetary and financial statistics. Candidate indicators include measures of the health of the banking sector, such as capital ratios; measures of the degree of banking penetration, such as the ratio of the M2 monetary aggregate to GDP, and so on. Considering that in many instances the seeds of financial crises are sown by the excessive growth of credit, we use the share of bank credit to the private sector, as an input to the LAPI, which has the added advantage of being comparable across countries.

Although labor market developments are of the utmost importance in assessing the performance of an economy, the coverage of the measures of unemployment varies significantly across countries, and is unavailable for some countries in the region. Considering this, we exclude unemployment from the estimation of the index, and maintain the growth of GDP and consumer price inflation as our broad measures of the evolution of the volume and prices of the goods and services produced.

Finally, from the government financial statistics we focus on the primary balance of the central government, which is the balance of revenues minus expenditures excluding interest payments. We choose this indicator because it is the relevant measure to assess the sustainability of public finances over the long-term. Moreover we focus on the central government because it is the level at which we can be certain we are gauging the shifts of fiscal policy across countries, and because it is the measure that is available and comparable across the majority of countries in the region.

Through the combination of these individual key indicators we are able to construct a composite index that captures salient features from each of the four pillars of macroeconomic statistics and from our perspective more fully reflects the depth and dimension of the economies of Latin America.

Khramov and Lee (2013) argue that their choice of benchmarks reflect the optimal level for each indicator, implying that deviations from the reference value of 100 reflect decreases in performance. It should be stressed that this interpretation is conditional on the benchmarks chosen. We believe that one of the advantages of the relative simplicity of the indicator is that its benchmarks can be adjusted to reflect different uses of the indicator. For example, benchmarks can be chosen so as to reflect desired levels of performance to close existing gaps, for instance in the creation of jobs.

In this paper we choose benchmarks that reflect the historical long-run performance of the economies of Latin America, as such deviations above (below) the reference value of 100 reflect better (worse) than average performance over the long-term as follows: Regarding the benchmark for GDP growth, we posit the existence of a potential growth rate. Since this variable is unobservable and notoriously difficult to estimate, we follow standard practice and approximate its evolution using the Hodrick-Prescott filter (Hodrick and Prescott, 1997), with a smoothing parameter equal to 6.25, which is the yearly equivalent of the commonly used value of 1,600 for quarterly data (Ravn and Uhlig, 2002). In order to account for the distortion introduced by the asymmetric nature of the filter at the end of the sample, we follow Kaiser and Maravall (1999) and extend the time series using forecasts before estimating the smoothed series. Forecasts are obtained using the automatic routine in the program TRAMO (Caporello and Maravall, 2004; Gómez and Maravall, 1994).

Although in standard monetary policy models a zero target for inflation is optimal from a welfare perspective (see for example Galí (2003) for a brief overview), once it is recognized that the actual environment where policy is implemented is characterized by incomplete markets and substantial heterogeneity across agents, a zero target for inflation becomes suboptimal (Bhattacharya and others, 2005). Considering the history of relatively high levels of inflation that has characterized Latin America, we set benchmark inflation at 5% and only penalize deviations above the target for the computation of the performance index.

For the cases of public finance and the external sector, we set the benchmark value of the central government primary balance, and the current account balance equal to zero. In the case of the primary balance we choose the target because it is the level consistent with the long-term budget balance of the public sector, and in the case of the current account balance because it reflects a situation where all investment during a given year is financed out of domestic savings.

For the financial sector, considering the volatility of the series for bank credit to the private sector, expressed as a proportion of nominal GDP, we penalize year to year changes in the ratio that exceed the value of the standard deviation of the series over the previous 10 years. The idea is to capture sudden changes in the provision of credit that could signal future imbalances. That is to say, excessive or one-off events in levels of credit growth are not necessarily problematic. Rather, sustained episodes of low or excessive credit growth are penalized.

Our modified performance index is constructed according to the following formula:

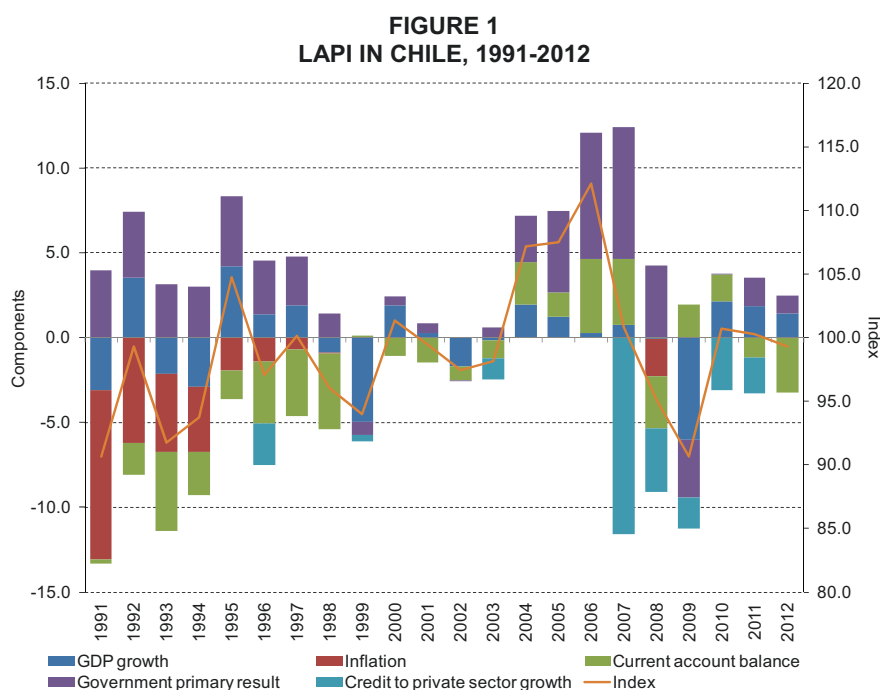
$$LAPI = 100 + \theta_y(\Delta_y - \Delta_y^*) - \theta_\pi[l_{\pi}(\pi - \pi^*) + \theta_G(G - G^*) + \theta_{CA}(CA - CA^*) - \theta_{Credit}[l_{Credit}(\Delta Credit - \Delta Credit^*)]$$

where Δ_y denotes annual GDP growth, π is yearly average consumer price inflation, G and CA are respectively the central government primary and current account balances, both expressed in terms of GDP and $\Delta Credit$ is the variation of credit provided by banks to the private sector as a proportion of GDP. The starred variables denote the respective benchmarks, while the l_j , where $j \in \{\pi, Credit\}$, are conditional indicator variables which take the value of one if the respective statistic exceeds the value of its benchmark, and zero otherwise. Finally the θ_i , where $i \in \{y, \pi, G, CA, Credit\}$, are the weights for each component which are computed as the product of the inverse of the standard deviation of each component’s deviation from their respective benchmarks, times the average of the individual components standard deviation. All standard deviations are computed for the sample period under consideration. As in Khramov and Lee (2013) the logic behind the choice of weights is to rescale the importance of the most volatile components, to as not to distort the overall fluctuations of the index.

By combining the key statistics into a single composite indicator, the LAPI enables a broad audience to gauge the overall macroeconomic health of the economy. Moreover the analysis of the contribution of each component to the changes of the index provides additional tools to dissect the sources of fluctuations in macroeconomic performance. The index was constructed to enable its simple mathematical calculation, and allows for each variable to be presented in the same measurement, in this case as a percentage.

A. Application in Latin America

In order to illustrate the use of the LAPI, as well as to assess its sensitivity to the choice of benchmarks, in the rest of this section we analyze the macroeconomic performance of Chile over the last two decades. The choice reflects the fact that recent economic developments in Chile allow us to highlight some of the features of the index. However it should be stressed that the index can be used for any country in the region, and that the robustness to the choice of alternative benchmarks applies to all countries.



Source: Authors’ elaboration based on official national data.

Figure 1 shows the evolution of the LAPI, and the contribution of its individual components, for Chile over the period 1991-2012. While the general upward trend in the index until the mid 2000s reflects the gains in macroeconomic performance achieved by Chile during this period, the fluctuations around the trend point to a more nuanced story that one would obtain by looking at a single indicator such as GDP.

It can be seen for example that over the large part of the nineties as monetary policy struggled with the effect of relatively large capital inflows from abroad, inflation was consistently above its benchmark, thus subtracting from the indicator’s performance. On the other hand, the positive contributions of the government finance component evidence the commitment of the Chilean government to the achievement of primary surpluses.

Of particular relevance to Chile, and Latin America in general, is the evolution of the current account. During the nineties when the international price of copper, one of Chile’s main exports, was at historical lows the resulting current account deficits impinged on macroeconomic performance. However as the prices of copper rose as a result of renewed demand for commodities from China, the contribution of the current account turned significantly positive, in particular during the period 2004-2007.

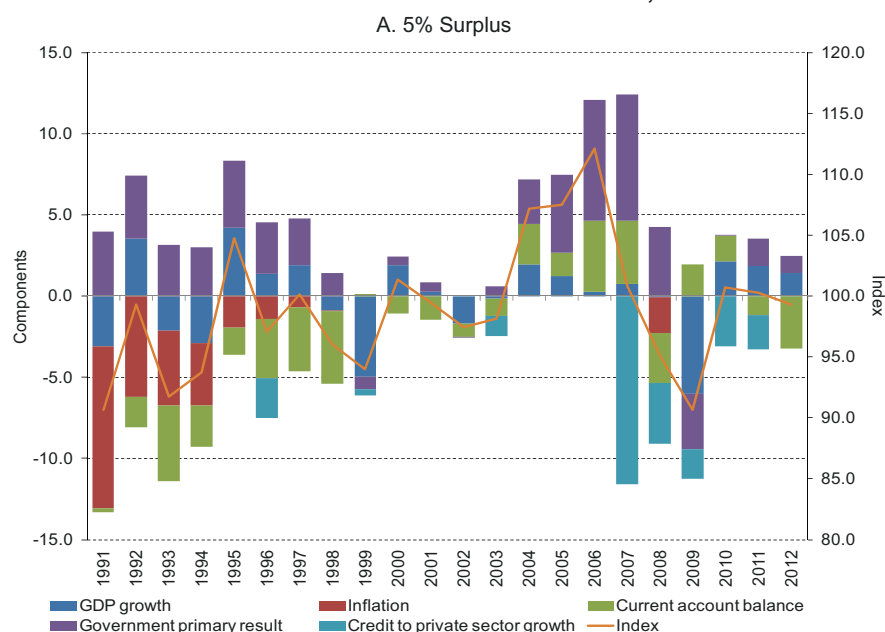
Finally, the spectacular rise in bank credit to the private sector observed from 2007 explains a sizable part of the decrease in macroeconomic performance which persisted until 2010 when GDP started growing above its long-term trend.

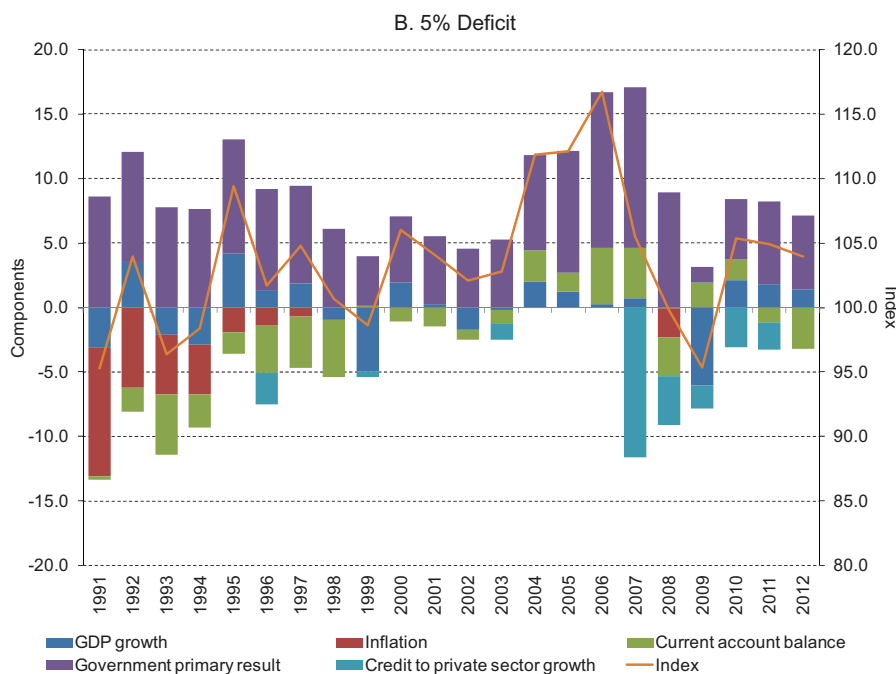
As the above discussion shows, while the LAPI is a useful tool to gauge the evolution of macroeconomic performance, it is the contribution of the different components that provide the inputs for a detailed analysis of the determinants of performance. Continuing with the example of Chile, the next subsection investigates the sensitivity of the index to the choice of alternative benchmarks.

B. Sensitivity analysis

As discussed above, our choice of benchmarks reflect the countries’ long-term performance. The benchmarks are of two types, fixed values such as those selected for inflation, and the balances of the current account and government finances; and fluctuating benchmarks such as the long-term trend of GDP and the standard deviation of the changes in credit to the private sector, which are computed on a rolling basis.

FIGURE 2
CHILE: LAPI USING ALTERNATIVE BENCHMARKS FOR THE
CENTRAL GOVERNMENT PRIMARY BALANCE, 1991-2012

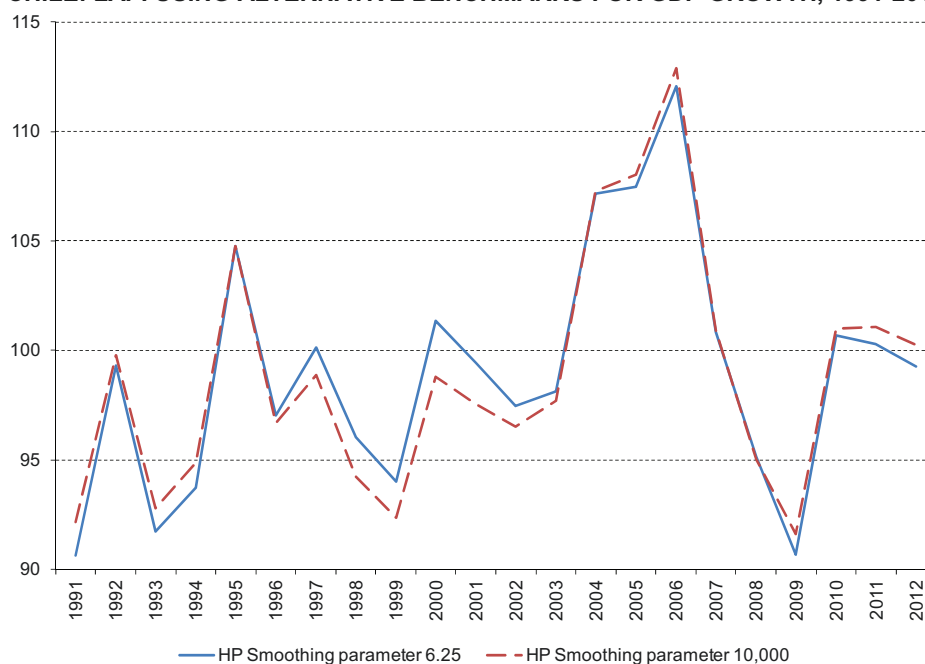




With respect to the fixed benchmarks, the effect of choosing alternative values will be to shift the LAPI upwards or downwards, depending on whether the new value is lower or higher than the original one. As illustrated in figure 2, where the panels show the effect of setting the benchmark for the government primary deficit at respectively, a surplus of 5% in the top panel, and a deficit of the same magnitude in the bottom panel, the overall dynamics of the composite indicator remain constant. That is, phases of performance improvements, stagnation and decline, as well as the magnitude and direction of the index changes remain the same. What does change however is the relative importance of the individual components, which bring us back to the claim made above that the interpretation of the sources of fluctuations of the index, is conditional on the choice of benchmarks. With respect to the original benchmarks (figure 1) raising the benchmark for the central government primary balance (top panel of figure 2) changes the sign and reduces the relative weight of this component, whereas the opposite happens when the benchmark is reduced as illustrated in the bottom panel of figure 2.

Regarding the fluctuating benchmarks, the effect is more nuanced since while it affects the volatility of the composite index it has a relatively minor effect on the sign and relative importance of the individual components. To understand why this occurs consider the case of GDP growth. As the name implies, the effect of choosing a larger smoothing parameter for the Hodrick Prescott filter is a smoother benchmark series, with the filtered series approximating a linear fit as the parameter becomes very large. Since we are penalizing deviations of GDP growth from its long-term trend, a smoother trend implies that the estimated deviations will be larger in magnitude, thus making the index more volatile. The opposite occurs when the smoothing parameter becomes smaller. However, as figure 3 shows, the effect of this change is relatively small even though at 10,000, the alternative value for the smoothing parameter is several orders of magnitude greater than the original benchmark value of 6.25.

FIGURE 3
CHILE: LAPI USING ALTERNATIVE BENCHMARKS FOR GDP GROWTH, 1991-2012



Source: Authors' elaboration based on official national data.

Table 1 compares the contribution of each component under the alternative smoothing parameters for the period 1997-2003, which corresponds to the period where the composite indicator is most sensitive to the benchmark smoothing parameter for growth. There we can see that the smaller index value observed under the alternative benchmark is explained by the higher penalization of GDP growth deviations from a smoother reference series. Despite this the effect on both the absolute and relative magnitudes of the contributions of the rest of the components are quite robust to changes in the benchmark value. For the case of credit to the private sector, a similar effect would be observed by adjusting the length of the period considered to compute the benchmark standard deviation. Longer lengths will mean a smoother evolution of the reference, implying that in general sudden changes will be penalized more strongly than those with shorter spans.

TABLE 1
CHILE: CONTRIBUTION OF COMPONENTS UNDER ALTERNATIVE BENCHMARKS FOR GDP GROWTH, 1997-2003

	1997	1998	1999	2000	2001	2002	2003
Index (Original)	95.6	91.0	91.6	97.3	92.7	93.4	97.0
GDP growth	3.6	1.1	-0.3	3.8	-3.5	-2.1	-1.4
Inflation	-5.9	-4.1	-4.3	-1.7	-0.5	0.0	0.0
Current account balance	-3.4	-6.7	-5.2	-5.7	-5.1	-4.1	-2.3
Government primary result	1.5	0.7	1.3	0.9	1.8	-0.5	0.6
Credit to private sector growth	-0.2	0.0	0.0	0.0	0.0	0.0	0.0
Index (Alternative)	95.4	91.4	92.1	97.0	92.6	92.8	96.5
GDP growth	3.5	1.7	0.4	3.7	-3.6	-2.6	-1.8
Inflation	-6.0	-4.2	-4.4	-1.7	-0.5	0.0	0.0
Current account balance	-3.5	-6.9	-5.3	-5.8	-5.2	-4.1	-2.4
Government primary result	1.5	0.7	1.4	0.9	1.8	-0.5	0.7
Credit to private sector growth	-0.2	0.0	0.0	0.0	0.0	0.0	0.0

Source: Authors' elaboration based on official national data.

In general, we conclude that while the dynamics of the composite index are in general found to be quite robust to the specification of alternative benchmarks, the sign and relative magnitude of the contribution of individual components should always be interpreted as conditional on the chosen benchmark. Before concluding, it is necessary to mention that some countries, such as Brazil and Nicaragua, were still struggling to contain inflation at the beginning of the nineties. Care should be exercised when choosing the study-period in these cases, as the inclusion of hyper-inflationary periods, or other extreme values in general, severely distort the estimation of the weights of each of the components.

C. Scope of the LAPI

In evaluating and contextualizing the scope of the LAPI it is important to note that we make no claims regarding the success of the long-term economic performance of the economies of Latin America. For example, we do not assess whether a particular country's growth rate or level of credit available to the private sector is appropriate or lacking in any sense. In the same vein, while the choice of zero as the benchmark value for the balances of the public and external sectors penalizes deficits, this does not have an implicit judgment on the benefits of current account or primary surpluses.

We find it important to acknowledge what the LAPI is, and on the other hand, also to highlight what the index is not. The LAPI's principal objective, as we have previously noted, is to serve as a summary measure of headline economic performance. However, the LAPI also takes into account the availability of the diverse cross section of macroeconomic indicators and aims to incorporate and balance the influence of each component. An additional strength of the index is that due to its composition and the fact that the selected indicators are captured in the same units, we can isolate and observe the contribution of each input to the overall headline figure.

It is worthwhile to acknowledge the limitations of a composite macroeconomic indicator and to define the scope of the index. The LAPI was not conceptualized nor designed as a tool to assess public policy or political goals. It is also not constructed in a way to give meaningful commentary on the state of equality or inequality in a given economy. However, it is a very relevant measure for assessing overall performance of economies, particularly in Latin America, and can be used as a complementary tool for analyzing overall levels of national development along with other composite indicators such as the UNDP's HDI, or the OECD's Better Life Index, which focus on more social and human-level aspects of development.

As the previous chapter has discussed, the LAPI can serve as a very relevant tool for macroeconomic analysis across countries and across time frames. Through the construction of a sensitivity analysis, the chosen benchmarks and indicators have shown their robustness in capturing the variations in overall performance, while allowing for the comparison of each indicator's contribution and influence in the overall index. The LAPI allows for a deeper understanding of the factors that are driving economic performance across countries in the region. As we will illustrate in the following section, the LAPI can also serve as a rich tool for macroeconomic analysis.

IV. Examples of the application of the LAPI

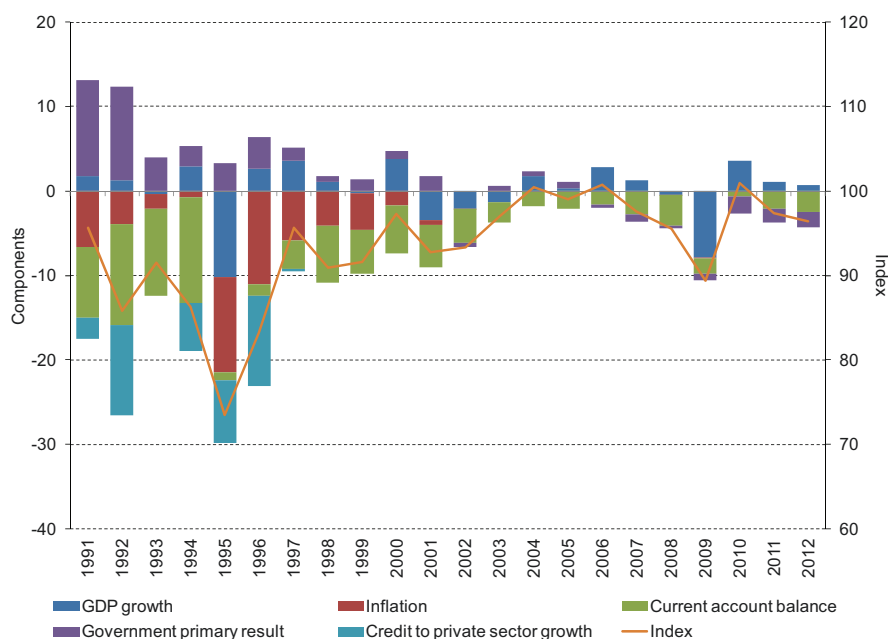
In this section we demonstrate some applied uses of the index through an analysis of three situations which are encountered in the practice of macroeconomic evaluation: the comparison of different historical episodes for the same country, the analysis of a common episode in comparative perspectives across countries, and the analysis of current conditions.

A. Comparison across time

One way to test the LAPI's validity is to see if it captures economic recessions, both across time and in relative severity. The value of analyzing economic performance across time is that we can observe national performance over a long-term trend. As shown in figure 4, the modified LAPI clearly captures the overall rhythm of the Mexican economy; capturing the sharp fall in 1994 and its severe impact in 1995, as well as the recession in 2009 following the onset of the global economic crisis.

While in both years GDP growth fell significantly, the rest of the variables behaved very differently, reflecting the fact that the 1995 crisis was a homegrown balance of payment crisis, which resulted in Mexico abandoning its crawling peg to the dollar (a fact which goes a long way in explaining the results for inflation, credit growth, and the current account balance for 1995), whereas 2009 was the result of the international financial crisis and the resultant contraction in overall economic activity, as seen by the sharp fall in the contribution of GDP growth to the overall index. Throughout the nineties, the government primary balance was a largely positive factor in Mexico, though it began to perform below its targeted balance in the years leading up to the 2009 crisis. Government intervention during the crisis swelled the primary deficit, though as we can see from its incidence in Mexico's LAPI, the primary deficit persists. We note that the current account deficit, while improving from the large deficits in the early nineties, has continued to perform below its benchmark target. After bouts of high inflation during and immediately following the 1995 crisis, the role of inflation in overall economic performance seems to be moderating. In a similarly positive vein, GDP growth has tended to lead Mexico's overall macroeconomic dynamics. Notwithstanding sharp falls in 1995, and 2008-2009, GDP growth, as compared to its long-term trend performance has played a leading role in Mexico's overall dynamics, contributing positively to the overall LAPI score. As we have noted in previous examples, the selection of the time-frame for evaluation, does have a significant impact on the magnitude of the LAPI.

FIGURE 4
MEXICO, 1991-2012



Source: Authors' elaboration based on official national data.

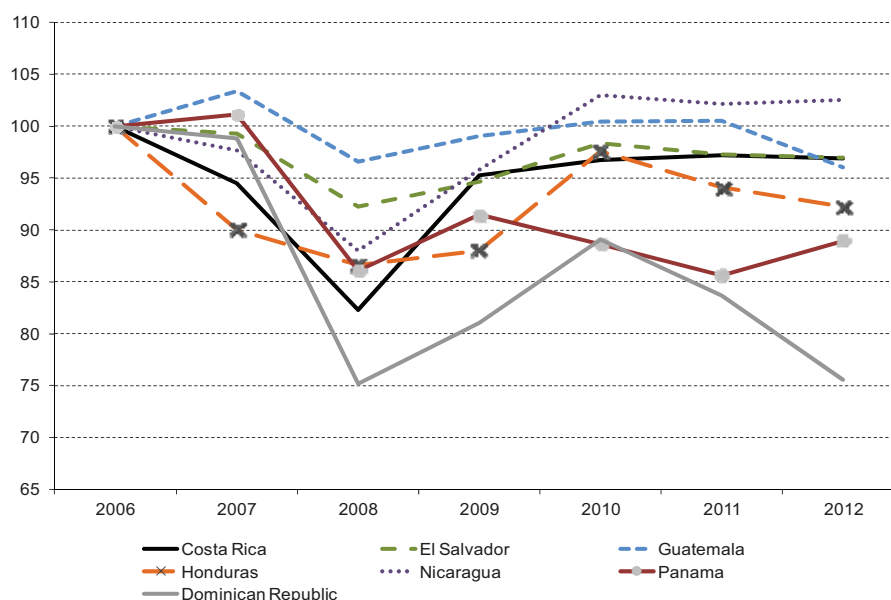
B. Comparison across countries

Another way in which the LAPI can be used is to analyze the impact of a common event across a group of countries. To illustrate this, we examine the performance of the countries of Central America and the Dominican Republic (CARD) in the face of the recent global crisis.

Figure 5 shows the relative performance of the different countries in the sub-region over the period from 2006-2012. For comparison purposes we normalized the initial period to 100 and computed the fluctuations from the individual LAPIs. In contrast to what was observed for the Latin American region as a whole, where the brunt of the recent financial crisis was felt in 2009 (ECLAC, 2010), for the countries in the sub-region, the financial crisis actually provided some relief through its effect on the international prices of food and energy, of which the region is a net importer. We see that the most severe impact of the global crisis, was actually felt in 2008 in the sub-region. While all countries experienced a contraction in their overall LAPI scores in 2008, we note a particularly sharp falls in the Dominican Republic and Costa Rica.

The incidence of each of the components for the period is shown in table 2. There we can appreciate that the rise in commodity prices which peaked in 2008, caused a significant deterioration of the current account balances of the region, as well as an important uptick in inflation. The deterioration of the current account also played a role in the deceleration, and in some cases, contraction of economic activity in 2008. The sharp drop observed as a consequence of the collapse of demand for commodities resulting from the global financial crisis in 2009, partially reversed the deterioration of economic conditions in the sub-region, which was reflected in an improvement of the current account balances and a reduction of inflationary pressures. These developments provided a buffer to the worsening of economic activity that resulted from the crisis. In the aftermath of the crisis, in general, the economic climate improved before stalling towards 2011 as a result of the concerns about the sovereign debt crisis in the Euro zone, which once again impacted the region through its effect in a reduced demand for exported goods. We continue to observe the large current account deficits as a drag on the overall performance of the region. On a positive note, however, inflation no longer is a major obstacle on regional performance. Though it must be acknowledged again, that the selection of time periods for analysis, does influence the weight and magnitude of inflation in the LAPI.

FIGURE 5
CENTRAL AMERICA AND THE DOMINICAN REPUBLIC, 2006-2012



Source: Authors' elaboration based on official national data.

It is interesting to note that in contrast to the rest of the sub-region, where the economies have more or less regained pre-crisis levels of economic performance, the indices for the Dominican Republic and Panama exhibit a persistent downward overall trend. From table 2 it can be seen that in the case of Panama, the driving force has been the evolution of the current account balance, whose deterioration reflects the increase in imports associated with the expansion of the Panama Canal. Despite that, in the Dominican Republic, the negative trend has also been the result of the deterioration of the current account deficit, in this case it stems from the suspension of gold exports in 2007; and the sizable fiscal deficits starting in 2007, which are partly explained by the fiscal cost of the persistent energy subsidies.

TABLE 2
CENTRAL AMERICA AND THE DOMINICAN REPUBLIC: LAPI AND THE CONTRIBUTION OF EACH COMPONENT TO THE INDEX, 2006-2012

	2006	2007	2008	2009	2010	2011	2012
Costa Rica	94.1	88.9	77.4	89.6	91.0	91.4	91.2
<i>GDP growth</i>	3.0	2.7	-1.4	-4.6	1.0	0.1	0.3
<i>Inflation</i>	-4.6	-3.1	-6.0	-2.0	-0.5	0.0	0.0
<i>Current account balance</i>	-5.8	-7.9	-	-2.5	-4.5	-6.8	-6.7
<i>Government primary result</i>	2.8	3.8	2.4	-1.3	-3.2	-2.0	-2.4
<i>Credit to private sector growth</i>	-1.3	-6.5	-5.7	0.0	-1.8	0.0	0.0
El Salvador	99.9	99.2	92.2	94.6	98.3	97.2	96.9
<i>GDP growth</i>	1.1	1.5	-0.1	-3.4	0.3	0.7	0.2
<i>Inflation</i>	0.0	0.0	-4.3	0.0	0.0	-0.2	0.0
<i>Current account balance</i>	-2.8	-4.1	-4.9	-1.0	-1.7	-3.3	-3.7
<i>Government primary result</i>	1.6	1.9	1.4	-1.0	-0.3	-0.1	0.4
<i>Credit to private sector growth</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Guatemala	94.5	97.7	91.2	93.6	94.8	94.9	90.7
<i>GDP growth</i>	1.7	3.0	-0.3	-3.2	-0.2	1.3	-0.4
<i>Inflation</i>	-1.3	-1.5	-5.3	0.0	0.0	-1.0	0.0
<i>Current account balance</i>	-3.8	-3.9	-2.7	0.5	-1.0	-2.5	-1.9
<i>Government primary result</i>	-1.2	0.1	-0.6	-3.7	-3.9	-2.8	-1.9

(continued)

TABLE 2 (Conclusion)

	2006	2007	2008	2009	2010	2011	2012
<i>Credit to private sector growth</i>	-0.9	0.0	0.0	0.0	0.0	0.0	-5.0
Honduras	95.2	85.7	82.4	83.8	92.9	89.6	87.8
<i>GDP growth</i>	1.4	1.8	0.7	-5.7	0.9	0.8	0.5
<i>Inflation</i>	-0.5	-1.8	-6.1	-0.5	0.0	-1.7	-0.2
<i>Current account balance</i>	-2.3	-5.5	-9.4	-2.3	-2.6	-4.8	-5.2
<i>Government primary result</i>	-0.2	-3.5	-2.8	-7.7	-5.4	-4.7	-6.3
<i>Credit to private sector growth</i>	-3.2	-5.2	0.0	0.0	0.0	0.0	-1.0
Nicaragua	90.1	88.0	79.2	86.3	92.8	92.0	92.3
<i>GDP growth</i>	0.4	1.7	1.0	-5.7	0.4	1.9	1.3
<i>Inflation</i>	-2.7	-3.1	-7.9	0.0	-0.5	-1.9	-1.4
<i>Current account balance</i>	-9.4	-12.5	-13.9	-7.2	-7.6	-10.0	-9.7
<i>Government primary result</i>	1.8	1.8	0.0	-0.8	0.4	1.9	3.4
<i>Credit to private sector growth</i>	0.0	0.0	0.0	0.0	0.0	0.0	-1.3
Panama	104.2	105.4	89.7	95.3	92.4	89.2	92.7
<i>GDP growth</i>	0.1	4.1	1.7	-6.1	-1.6	2.6	2.8
<i>Inflation</i>	0.0	0.0	-9.9	0.0	0.0	-2.3	-1.8
<i>Current account balance</i>	-1.6	-4.7	-6.5	-0.4	-6.1	-9.5	-6.4
<i>Government primary result</i>	5.8	6.0	4.4	1.9	0.1	-1.6	-1.9
<i>Credit to private sector growth</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dominican Republic	103.4	102.2	77.7	83.8	92.1	86.5	78.1
<i>GDP growth</i>	7.1	3.0	-2.2	-4.7	4.1	-1.7	-2.7
<i>Inflation</i>	-1.0	-0.4	-2.1	0.0	-0.5	-1.3	0.0
<i>Current account balance</i>	-3.9	-5.7	-10.6	-5.4	-9.0	-8.5	-7.7
<i>Government primary result</i>	1.1	5.3	-7.4	-6.2	-2.5	-2.0	-11.5
<i>Credit to private sector growth</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: Authors' elaboration based on official national data.

C. Drivers of the recent economic outlook

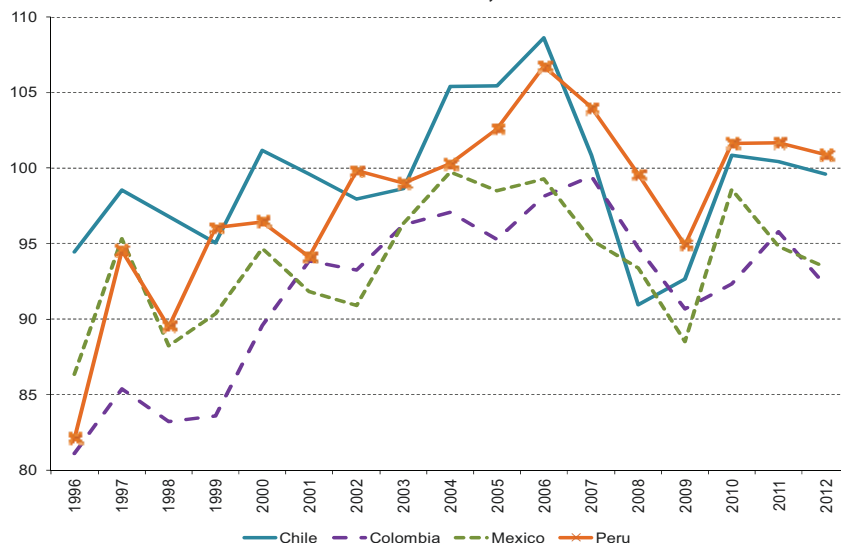
Figure 6 shows the overall change in LAPI performance from 1996 to 2012 for some of the region's major economic players: Mexico, Colombia, Chile and Peru.¹ Chile and Peru, South America's largest resource dependent export economies, showed a strong upward trajectory from the mid-1990 in their overall LAPI scores, in large part due to the rising commodities prices and uptick in global demand for their exports, which helped to boost growth and set up a positive fiscal balance in these countries. Despite their sharp falls in the midst of the crisis, Chile and Peru have both rebounded relatively strongly, and are overall performing above the benchmarks set for their long-term economic trajectory.

As we can see in figure 7, the composition of recent performance has shown some important variations across countries. While the majority of countries showed an improvement in their overall LAPI performance over this time, a notable trend is that across the region, there has been a chronic current account problem. This reduced performance, as noted by the incidence of the current account component, particularly in Mexico and Colombia in the years leading up to the global financial crisis in 2009, goes a long way to explain the fall in economic performance in recent years. Given the importance of exports in each of these economies, the overall slowdown in world trade, impacted the current

¹ It is interesting to look at a cross section of economies in the region. Therefore, we have chosen to highlight Chile and Peru which rely heavily on natural resources and extractive industries to shape their economic structure, Colombia whose economy derives a large portion of revenue from agro-industrial processes, and Mexico, which is a major manufacturing exporter, and a significant contributor to the region's overall economic performance. It should be noted that Brazil and Argentina were not included in this analysis. This is due to the large fluctuations in inflation in these countries with respect to their long-term trends, which preclude their selection for a longer-term evaluation.

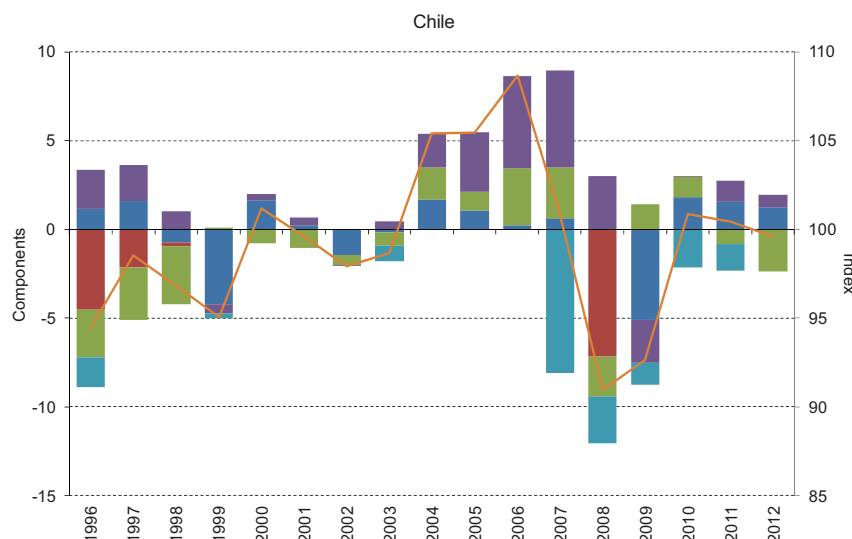
account dynamics strongly. It is also interesting to highlight the role of public finances in recent economic performance, though its contributions among the key large economies have been somewhat different in recent years. In the metal and mineral-rich economies of Chile and Peru, public finances, as noted by the positive contributions of the primary balance, compared to their long-term trend, did manage to shield the economies from the adverse impacts of the financial crisis, building a larger policy buffer space for countries to enact more strategic policies. Overall we can see across recent performance that the current account balance and the level of GDP growth have been the strongest drivers of LAPI performance. Public finance performance also plays a key role, though to a lesser extent across countries. Inflation, once the thorn in the side of historic Latin American macroeconomic performance has interestingly played a small role in determining the overall trend across the region, compared to other factors in the composite index.

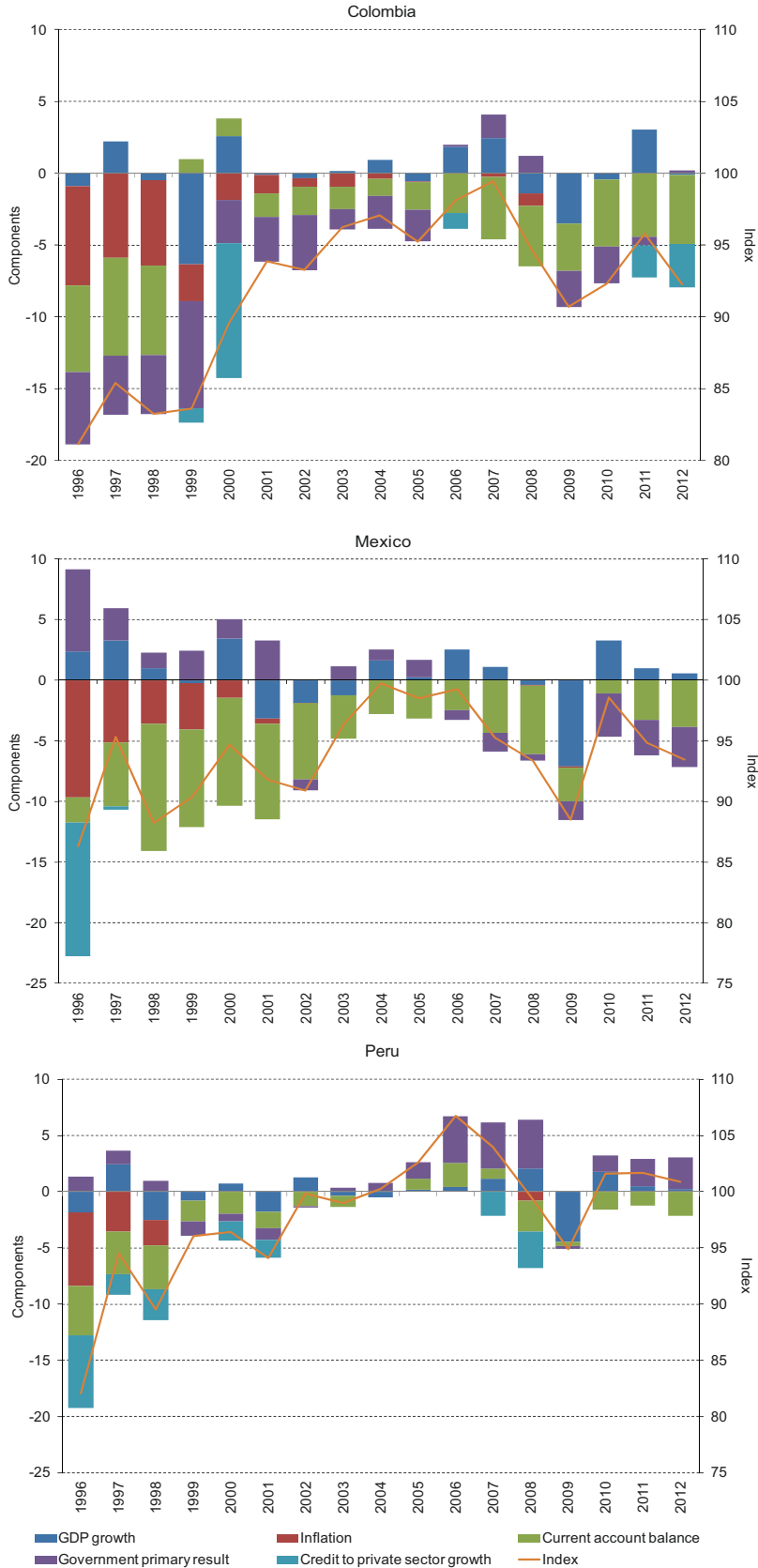
FIGURE 6
LATIN AMERICA: RECENT ECONOMIC PERFORMANCE IN SELECTED MAJOR ECONOMIES, 1996-2012



Source: Authors' elaboration based on official national data.

FIGURE 7
LATIN AMERICA: RECENT ECONOMIC PERFORMANCE BY COMPONENT IN SELECTED MAJOR ECONOMIES, 1996-2012





Source: Authors' elaboration based on official national data.

The role of credit growth has also been somewhat volatile across major economic players. In Chile and Peru, particularly in the years preceding the 2009 crisis, growth in credit to the private sector weighed negatively on overall economic performance, perhaps serving as an early signal of inherent financial sector weaknesses in these countries. In the case of Colombia, credit growth to the private sector was not a large factor in explaining the fall during the recent economic crisis, though in the recovery, credit has tended to deviate from its long-term performance.

Another value added of the LAPI is its contribution to highlighting variations in long-term economic performance. Due to the construction of the index and the long-term benchmarking of certain values, the LAPI can potentially serve as an early warning system for economies, highlighting weak or problematic performance in key variables, before they would combine to a fall in overall performance or even recession. Particularly in the large economies of Latin America, added insight into the structural dynamics of the economies' performances can help to formulate more strategic policy initiatives to address economic shortcomings.

V. Conclusions and the future outlook

Throughout this document we have emphasized the distinct need for a set of comprehensive and transparent national statistical indicators, acknowledging the role that statistics play in monitoring progress on economic, social, and environmental fronts and allowing for the analysis of a country and a region's macroeconomic outlook. We have seen that the variety of macroeconomic statistics is extensive, though their availability does tend to vary across countries.

We have also noted the advantages and benefits of constructing composite indicators for macroeconomic analysis. What is most important to highlight in the contribution of composite indicators is their power to synthesize information, while at the same time, maintaining the underlying richness of diverse statistical indicators, which when needed, can be decomposed into their contributive parts. Through the illustration of a simply constructed index, in this case, an adapted version of the EPI, which we have identified as the LAPI, we have demonstrated the value of this type of statistical analysis for understanding the overall macroeconomic performance of Latin American economies. As we have shown, the LAPI serves as a particularly straightforward and easily interpretable indicator that captures the overall health of a country's economic performance. We have also demonstrated its applicability in a variety of comparative circumstances, whether comparing similar episodes across groupings of countries, or a longer time frame of analysis to benchmark a country's economic performance over its historical trend. Application of the LAPI holds a broad potential, and its use may be expanded to cover economic performance across regions and sub-regions, among other potential applications.

Another strength of the LAPI that we have noted is the usefulness of the index for revealing the performance of underlying indicators, in this case the components of the index. When we analyze the incidence of each component, we can see more clearly the component(s) driving overall economic performance. This aspect of the index may have potential diagnostic purposes for evaluating future economic performance, by highlighting elements of the overall economic system that may be performing below their long-term trend levels, and could signal potential sources of macroeconomic weakness, before the overall health of the economy is impacted.

The need for statistics is tantamount. We as economic analysts, as policy makers, and as active citizens need to know where we have come from, and most importantly where we stand to help us think about how the economy will perform in the future.

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