



EL SALVADOR

SELECTED ISSUES

July 2016

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SELECTED ISSUES

June 1, 2016

Approved By
**Western Hemisphere
Department**

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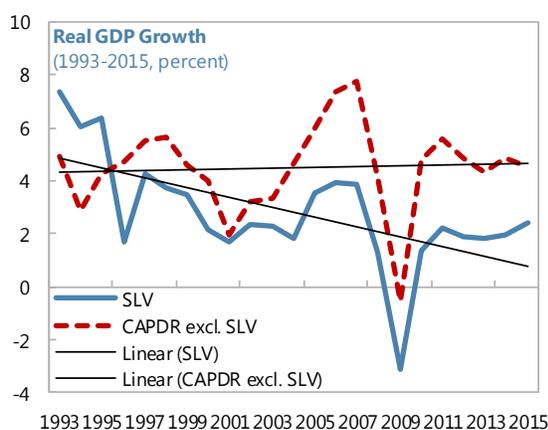
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PUZZLING OUT THE SALVADORAN GROWTH, MIGRATION, AND REMITTANCES NEXUS¹

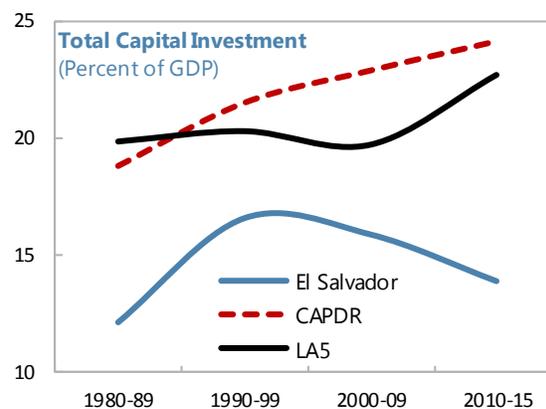
El Salvador's growth performance has been disappointing. This paper attempts to take a fresh look at the "growth puzzle" in a comparative perspective. The Hausmann's growth diagnostics approach offers a useful start, but it does not clearly explain El Salvador's comparative growth gap versus regional peers. The extent and timing of outward migration does set apart El Salvador from its neighbors. It also may figure among the underlying reasons for the relatively moderate growth of remittances in recent years in El Salvador. Data issues prevent strong conclusions, but key bottlenecks to facilitating reverse resource flows from the US Salvadoran Diaspora, such as insecurity and poor investment climate and competitiveness, seem all the more important to address.

A. Introduction

1. **El Salvador's long-term growth performance has been disappointing.** In the early 1990s, after the end of the civil war, the country was considered by some a potential Latin America tiger economy, due to its perceived dynamism at the time and expected gains from pro-market reforms and integration into the global economy. In the event, while a fair number of significant market-friendly reforms and steps toward international integration were implemented over the past two decades (Box 1), growth progressively declined. Potential growth is now assessed at around 2 percent—about half the rate observed in the rest of Central America. The sluggish growth and outlook pose major constraints on the improvements in the standards of living, fiscal sustainability, and social progress.



Source: IMF WEO database.



Source: IMF WEO database.

¹ Prepared by Bogdan Lissovlik.

Box 1. El Salvador: Key Pro-Growth Reforms of the 1990s and 2000s

- **Trade liberalization.** Tariffs were eliminated or cut and free trade agreements concluded with many key markets.
- **Bank modernization.** The banking system was privatized, with foreign ownership becoming dominant and international banking practices largely adopted.
- **Pension system.** The pay-as-you-go system was replaced by a system of defined contributions with private individual accounts and intermediated by private pension funds.
- **Privatization.** Private sector is prevalent in energy, telecommunications, and the financial sector in the wake of substantial privatizations,
- **Tax strengthening/simplification.** Value added tax was introduced in 1992, other tax policy and administration reforms followed in the 2000s.
- **Institutional reforms.** Public sector consolidation (rationalization and combining Ministries) and sectoral modernization efforts (in tourism and education) occurred over the last two decades.

2. **A gamut of reasons has been cited for the growth underperformance.** A key *proximate* explanation is the comparatively low level of total and particularly private investment. But behind this stylized fact there is a complex web of *fundamentals* related to history, institutions, policies, and other factors that cause the low investment in the first place. Growth diagnostics studies (see below) pointed to the lack of experimentation, low tradables productivity, and crime as key growth bottlenecks. More recent studies additionally invoked the role of shocks and poor business environment (IMF 2013), limited competition, poor logistics, insufficient education, and remittance-driven consumption bias (World Bank, 2015), high frequency of elections (IMF, 2015), the lack of private investor confidence due to unsustainable fiscal policies (Fusades, 2014), as well as lack of diversification in the tradables sectors (Amaya and Cabrera (2013)).

3. **Dollarization has also been cited as a potential reason, but available empirical evidence on it has been mixed.** A key challenge has been to identify control variables, and so far few authors have found clear angles on the role of dollarization. Swiston (2011) concludes that if anything the effect of dollarization on economic performance was positive due to its role in declining interest rates and synchronization with the US cycle. Ponce and Espinosa (2009) and Benino and Lindahl (2014) do not find a convincing negative link between dollarization and declining economic growth.² On the other hand, the latter authors, on the basis of a gravity model, do not detect positive effects of dollarization on international trade – a key purported dollarization benefit. Thus, the researchers' conclusion so far has been that dollarization seems to have been

² In particular, Ponce and Espinosa (2009) emphasize that the decline in El Salvador's trend growth started in the late 1990s, well before the official dollarization of 2001.

neither the magic bullet nor the dagger for growth in El Salvador. Still, it has been generally agreed that an adoption of dollarization raises requirements for the quality of economic policies for any country that contemplates it.

4. **Accordingly, it has been difficult to zero in on a compelling fundamental diagnostic.** For example, while lack of security has been a key common root-cause denominator in this analysis, it is not a clear explanation for El Salvador's growth gap versus regional peers such as Honduras or Guatemala, which have had broadly similar levels of crime.³ In addition, crime itself is partly a product of the economic environment. In this context, the World Bank (2015) argues that there may not be a single root cause for low growth in El Salvador, and suggests focusing on several interrelated vicious circles: (i) low-growth-high-crime nexus; (ii) low-growth-migration-remittances-competitiveness nexus; and (iii) low-growth/low-savings-cum-investment nexus. Still, this approach begs the question of why the circles do not have the same effects in El Salvador's regional peers.

5. **The ambiguity over diagnostics has affected policy recommendations.** Within El Salvador, there has been little consensus whether the key dimensions of pro-growth policies are related to the lack of demand, or supply bottlenecks. Accordingly, with respect to fiscal policies, calls for more active demand management (Amaya and Cabrera (2013)) have co-existed with those for consolidation (FUSADES, 2014). With respect to structural policies, while there is agreement on the need to improve security and some aspects of the business environment, there is less clarity about the role of wage moderation, industrial policies, or the government. The strong pro-growth focus of the Salvadoran government's 2015 five-year plan, which put an overriding priority on raising potential growth to 3 percent on a sustained basis, could be an important focal point for uniting society's efforts. However, an effective, shared strategy is needed to achieve these outcomes.

6. **This note attempts to take a fresh view on the root causes of the growth gap and related policy challenges.** The standard growth diagnostics exercise is updated as a useful organizing step, but they have a number of well-known limitations (see Hausman et al. (2009)) that are compounded by large data gaps in El Salvador. For example, given the sizable share of the shadow economy, it is difficult to assess return on investment. Similarly, it is difficult to derive credible measures of productivity and employment. Thus, it may be useful to approach problems from complementary angles putting weights on the various explanations not only in line with theory but also data robustness.

7. **A cross-country focus of such analysis has been relatively unexplored for El Salvador.** While the country is an outlier in terms of growth, the *comparative* growth gap has been recognized only relatively recently, and was not yet a key focus of many studies.⁴ Thus, it may be useful to search for other dimensions where El Salvador may be an outlier and rationalize those links to growth. Based on an extensive examination of cross-country information, this note identifies El

³ As argued below, the same argument applies to many other mentioned root causes, such as infrastructure quality, competition, logistics, or regulatory quality.

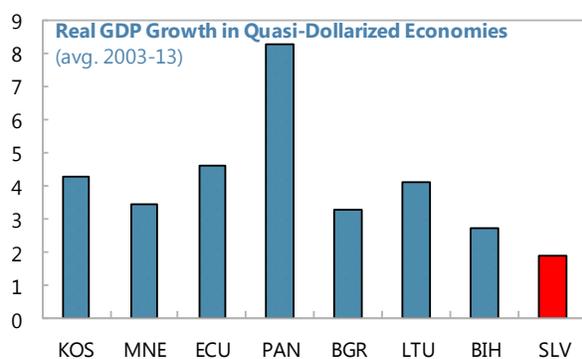
⁴In 2011-12, a consensus view was still that medium term growth in El Salvador would converge to 4 percent, rather similar to the Central American average.

Salvador as a clear outlier in terms of **outward migration**. Among other things, this study explores the role of migration and how it may interact with other key variables, including remittances, as well as policy recommendations.

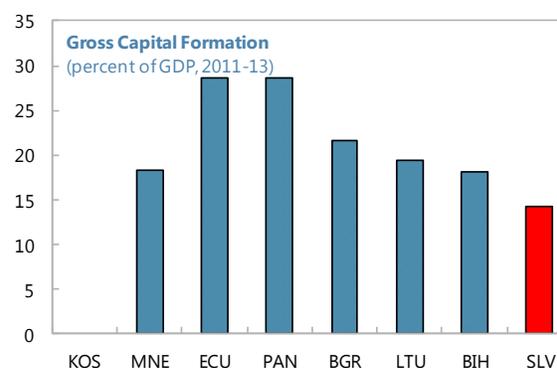
8. **The paper is structured as follows.** Section B would present key stylized facts about El Salvador's growth problem, in a cross-country perspective. Sections C and D discuss updated growth diagnostics and accounting exercises respectively. Sections E and F focus on migration and remittances as key factors specific to El Salvador, in general and within the region. Section G concludes.

B. Selected Stylized Facts on Growth

9. **The angles on Central America and dollarization seem to maximize signal extraction for El Salvador from cross-country comparisons.** Two groups of countries are selected for such comparisons for El Salvador. The most straightforward comparators are six Central American peers, in that they share many economic, political, social, and structural characteristics. For example, they are similarly sized and subject to many common shocks. Within the larger group of countries, Guatemala and Honduras, and to a lesser extent Costa Rica, are probably the closest comparators.⁵ The second relevant peer group are emerging markets that have had an official, or similar, dollarization regime. These are scattered around the world, and include Ecuador, Panama, Montenegro, Kosovo, Lithuania, Bulgaria, and Bosnia. The income, size, and other disparities of this group with El Salvador are larger, but not so large as to preclude their usefulness.



Source: IMF WEO Database.



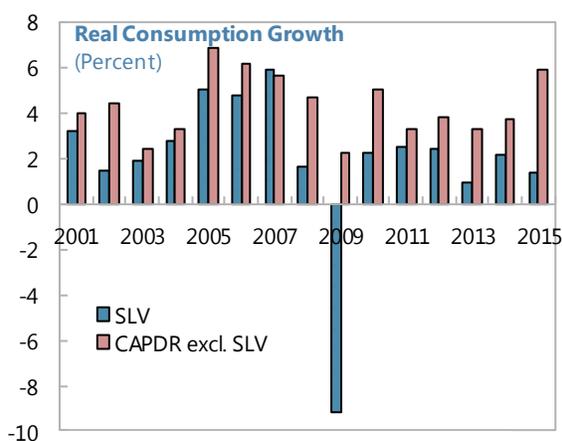
Source: IMF WEO database.

10. **The different comparative perspectives confirm that El Salvador is a major outlier in terms of growth and investment from several angles.** It has been the slowest growing country regardless of whether the income of selected comparators was higher or lower, and regardless of the structural features of the various peers. For example, over the past decade, it was still the least-growing country among the dollarized peers, with size of the gap roughly similar to that with

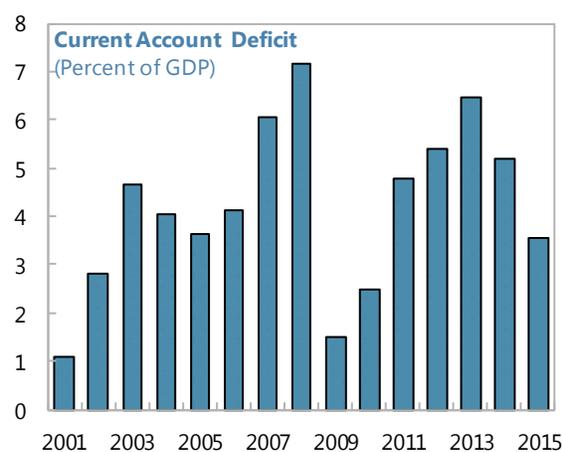
⁵ Among other countries, Nicaragua's income is on the low side for El Salvador, and Panama is on the high income end, with important special features (dominance of the canal and its position as a regional financial center). Dominican Republic is also somewhat different from continental Central America due to its position in the Caribbean.

Central America. El Salvador's investment rate is similarly the lowest compared to both groups of countries.

11. **On the demand side, the key specific stylized fact for El Salvador over the past 15 years is that it experienced a remarkable consumption re-balancing during the 2009 financial crisis compared to other countries.** While other Central American countries were able to support a positive growth of consumption during the crisis, El Salvador saw it fall by some 10 percent of GDP. The drop points to a likelihood of an unsustainable consumption boom prior to the 2009 crisis, which had to undergo a painful correction, with a counterpart correction in the current account deficit and imports. By contrast, El Salvador has been more similar to its CA peers in terms of the relative pattern of contribution of investment, which avoided a pronounced "boom-bust" scenario in 2009, in part reflecting an absence of a significant investment boom in the first place. The 2009 correction in consumption also seems to have had lasting effects on trend consumption growth post-crisis. This episode suggests that El Salvador's economy risks generating excess demand pressures in a situation of lagging investment and supply, even when growth is not particularly high.

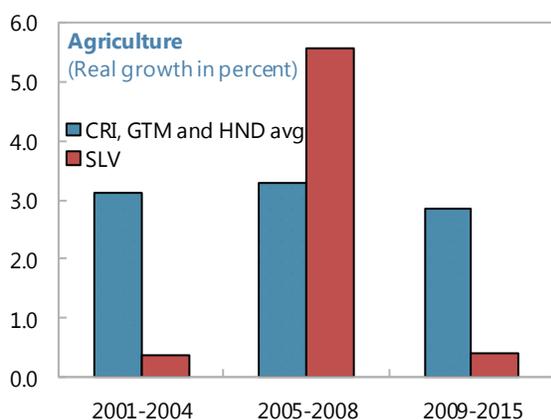


Source: IMF WEO database.

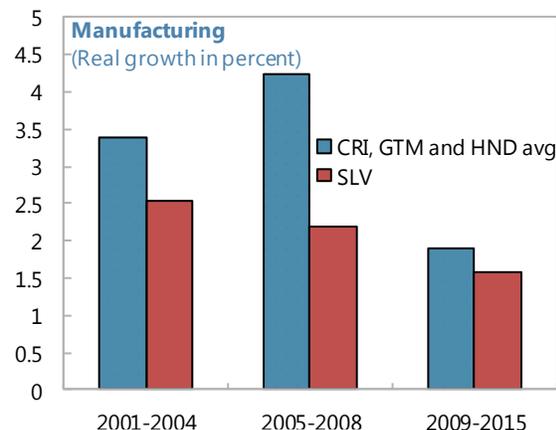


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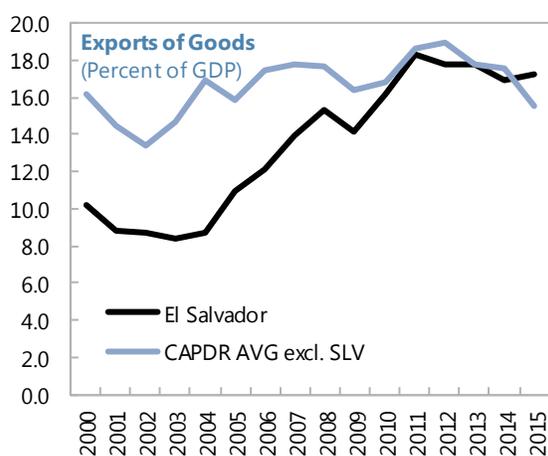
12. **On the supply side, over the past 15 years, El Salvador saw a broad-based output underperformance relative to peer countries across all sectors.** The cumulative comparative growth gaps are significant in the key tradables sectors such as manufacturing and agriculture. Interestingly, agriculture performance was briefly better than in peers during the pre-crisis 2005-08 boom period. It was also reflected in better export growth: El Salvador outperformed most of its Central American peers in exports during this pre-crisis period. However, this episode was short-lived and likely caused by external demand, highlighting difficulties for El Salvador to generate a durable supply response in the tradable sectors.



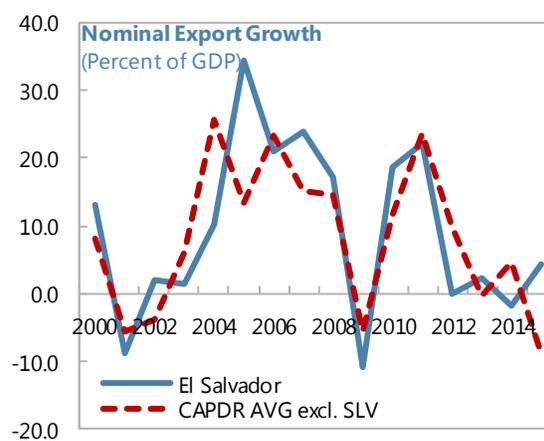
Sources: Haver and Central Bank



Sources: Haver and Central Bank.



Source: IMF WEO database.



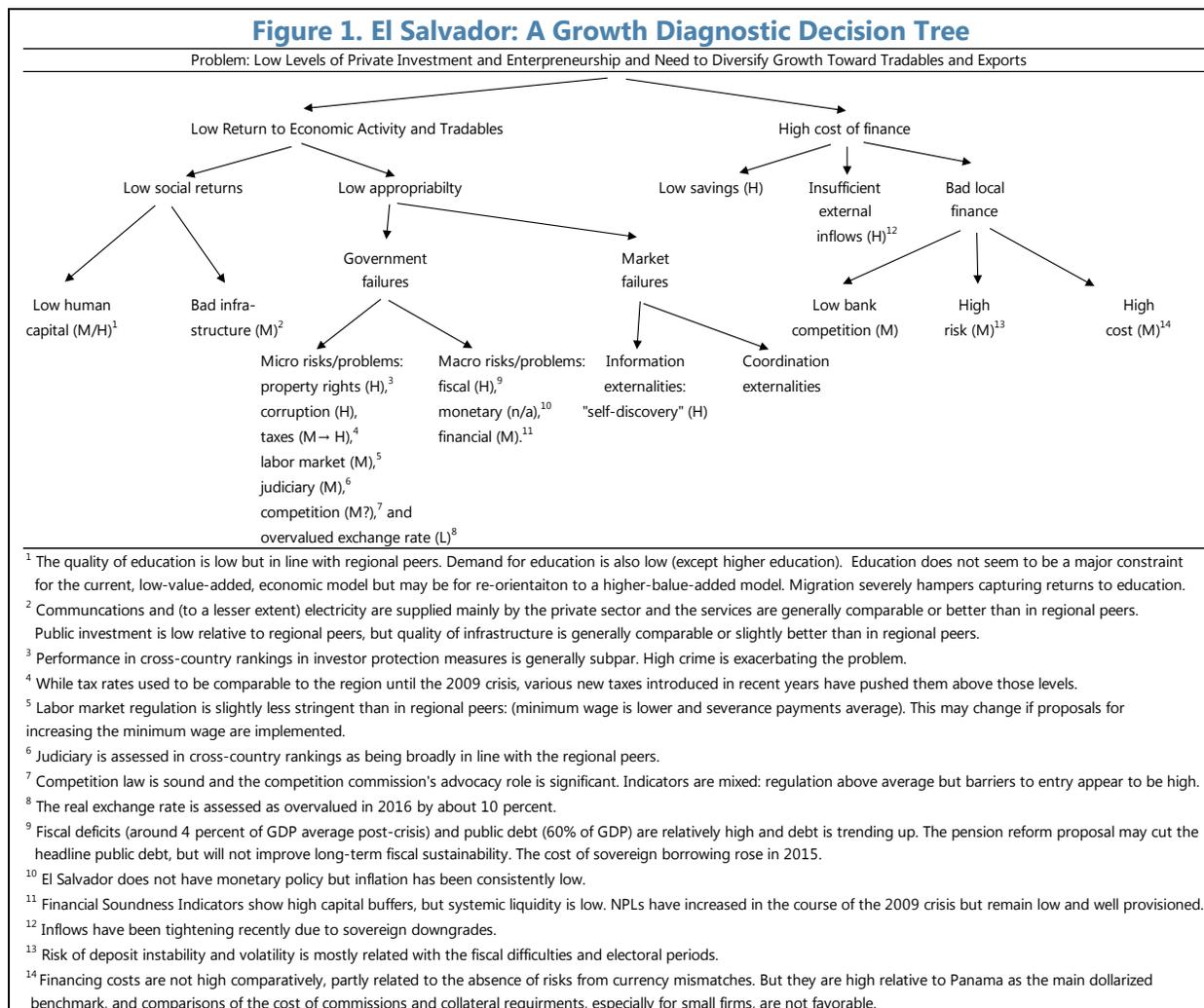
Source: IMF WEO database.

C. Updating Growth Diagnostics

13. **The growth diagnostic analysis has been performed on many countries, including repeatedly on El Salvador.** The original Hausmann et al. (2005) paper considered El Salvador as one of the case studies and concluded that its insufficient capacity for “self-discovery” as the key constraint for growth. A major follow-up study, US/El Salvador government (2011) singled out crime and low tradables productivity as key growth bottlenecks, concluding that other factors were less important explanations for low growth. In particular, it argued that El Salvador’s low saving rate did not seem a binding constraint, in part given the low demand for credit as possibly reflected in the relatively low level of the interest rates.

14. **Updated growth diagnostics tree.** Figure 1 indicates an updated perspective on El Salvador. It rates the key elements of the “decision tree” based on a probability of them being significant constraints for growth (High, Medium, or Low). The thrust of the conclusions of the previous studies carries through, but there are exceptions. First, based on recent experience it may

be argued that the low savings rate may well be a serious constraint to growth.⁶ Second, in view of recent tax-based measures, the situation with taxes is less friendly for growth than a few years ago.

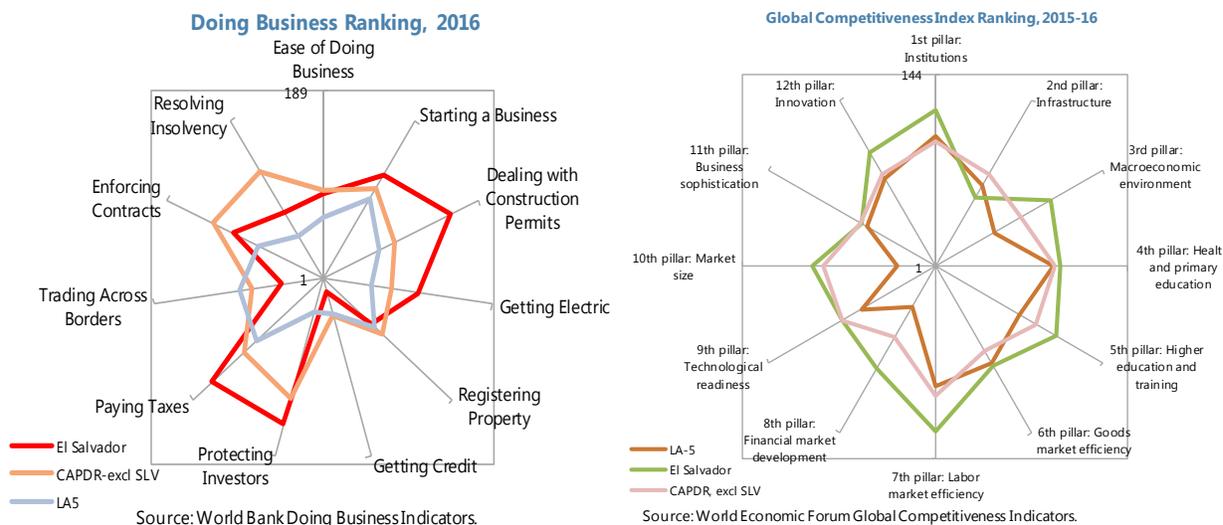


15. Overall, while issues related to the business environment are some of the key nodes in the decision tree, it is difficult to separate El Salvador in this respect from other CA countries.

Customary competitiveness rankings do not indicate very strong separation, particularly in the “doing business” indicators that aim to be geared to objective processes. This may reflect difficulty with data and insufficiently granular comparisons offered by cross-country rankings. For example, while Salvadoran competition intensity or regulatory or infrastructure quality is lower than in most OECD countries, it compares relatively favorably with some of its (higher-growing) regional peers, except maybe some aspects of business entry and investor protection. But it is far from certain that

⁶ Low comparable interest rates and spreads, which appear to have been a reason for the 2011 study concluding that low saving was not a constraint to growth, may be partly driven by dollarization, and in any case those spreads, as well as deposit rates, have been increasing recently. In addition, low saving rates may have contributed to boom-bust cycles of the type that characterized the large correction in consumption during the 2009 crisis.

those aspects are key magic bullets. In the context of this comprehensive diagnostic, there are significant data gaps: returns to economic activity include risks and are difficult to measure. Various other elements of the tree can be assessed only very imperfectly.



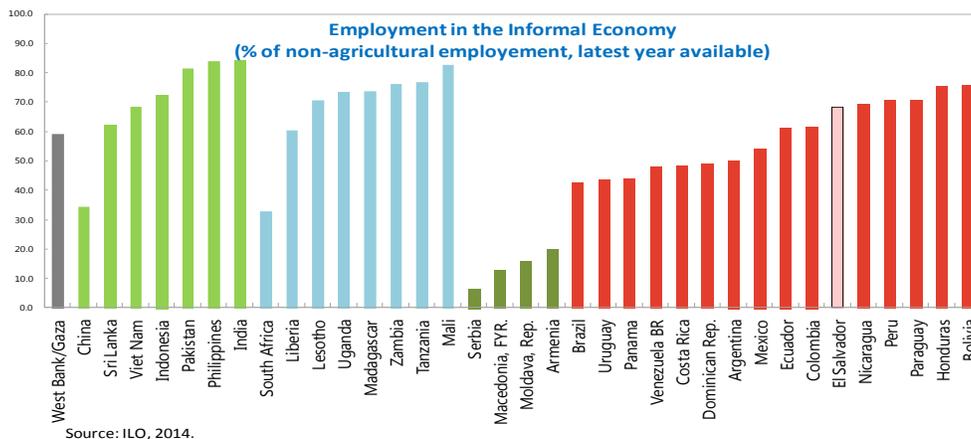
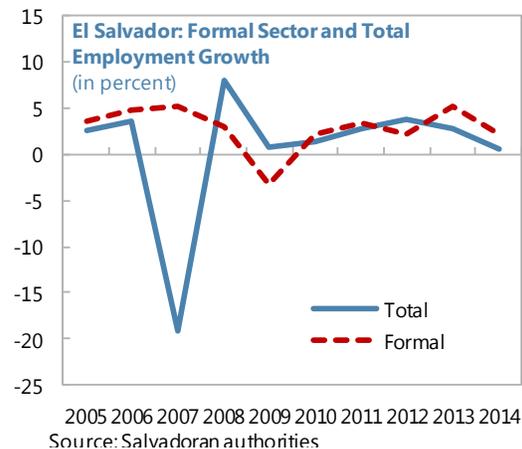
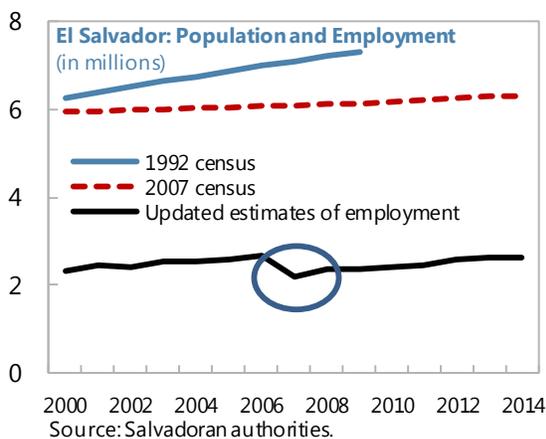
16. **There needs to be an attempt to go beyond the decision-tree or the growth diagnostics method, given its limitations (see Hausmann et al. (2009)).** First, the notion of a decision tree rules out important relationships and complementarities between different parts of the tree. Second, the concept of a binding constraint is not a binary (0, 1) variable, so it would be important to internalize the relative extent to which the constraints would be (partially) binding. In the Salvadoran context, it would be crucial to adjust these “weights” for the quality of the data. Third, it is desirable to further rationalize the growth problem both from cross-country and country-specific perspectives, in a holistic way.

D. Growth Accounting

17. **A further perspective is offered by a standard growth-accounting exercise** (see accompanying selected issues paper (Chapter II of this compendium) on potential growth). According to it, growth in El Salvador suffered because of declining capital contribution, as well as TFP growth becoming yet-more negative in the post-crisis period. By contrast, other CA countries had generally positive, or at least non-negative, TFP growth and somewhat higher capital growth. Labor growth was estimated to be a relatively solid contributor to economic performance in El Salvador, although some of its key peers (Guatemala, Honduras, and Nicaragua) saw yet-higher labor contribution. These results are similar to those reported by the World Bank (2015). The policy conclusion would be that there needs to be a boost to the quality and quantity of capital, as well as the quality of labor inputs to address these problems.

18. **Data accuracy is however a major caveat for these calculations, including for labor, which is affected by migration.** In particular, the conclusion of robust contribution of employment

hinges on accuracy of survey data.⁷ But with the large informal economy (two-thirds of total estimated employment), labor growth is highly uncertain, and this is further complicated by large outward migration. In the case of El Salvador, population census data offer a consistency check, but censuses are infrequent (once in 15 years or so). The most recent (2007) census prompted major ex-post revisions, and the resulting data on total employment dynamics have been difficult to rationalize. The revision in population estimates in 2007 amounted to about one million. A corresponding revision in total employment yielded a 20 percent drop in 2007 (a year of robust GDP and formal employment growth). At the same time, available estimates for 2009 (a major crisis year globally and in El Salvador), yield positive total employment growth, which does not seem very plausible. Thus, without an updated census it is quite likely that employment estimates for the more recent years could be off by a certain margin, with annual growth rates also being prone to revisions. A forthcoming revision of national income accounts should greatly improve data quality.



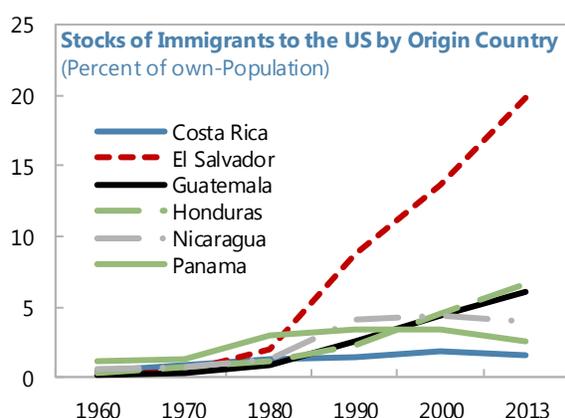
E. Role of Emigration

19. **Data from the US offer an additional key consistency check on the relative effects of emigration in Central America.** The US economy is the destination of the overwhelming majority

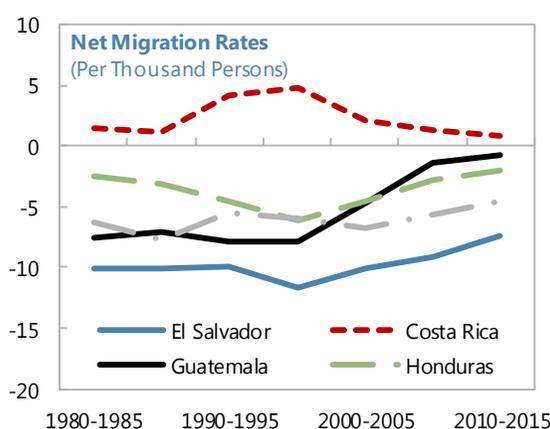
⁷ The main source of comprehensive labor market information is annual multipurpose household survey data, which is based on tracking information for about 20,000 households. More accurate and frequent information is available on the “formal” sector, but not the broader economy, based on social security information.

of emigrants from the region (especially El Salvador, Guatemala, and Honduras – where according to estimates the US is the destination of about 90 percent of emigrants), and the US government authorities collect information on the stocks of migrants. While the data could also be affected by the informal economy, the US-based surveys seek to cover migrants (formal and informal) in a consistent way, offering cross-country data comparability.

20. **El Salvador is a clear outlier in terms of outward migration to the US relative to its Central American peers.** Emigration from El Salvador started comparatively early, being driven by the civil war of the 1980s. Other countries, particularly Guatemala and Honduras, also have had high emigration rates, but not close to those of El Salvador. While the key motives for the emigration are economic, with a feedback loop to low growth (World Bank (2015)), in El Salvador's case there was a large economically-exogenous initial push due to the combination of a military conflict and humanitarian response by the US authorities. This push had longer-term, path-dependent effects that continued to favor higher migrant flows from El Salvador than from other Central America. This reinforced the process whereby many Salvadoran families gained a foothold in the US, thereby finding it easier to migrate. Thus, despite some signs of catch-up migration in Guatemala and Honduras, Salvadoran net migration outflows, as a proportion of population, have continued to be much higher and have been subsiding more moderately.

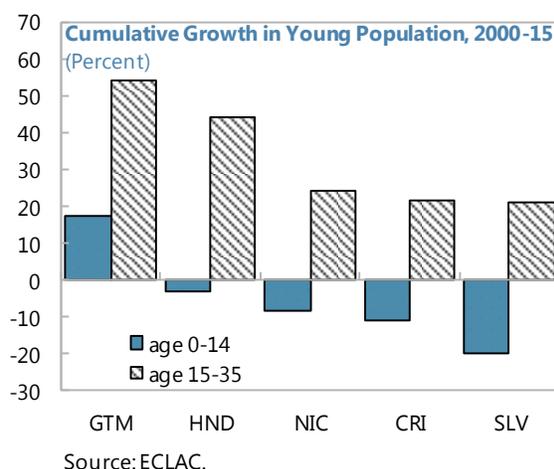
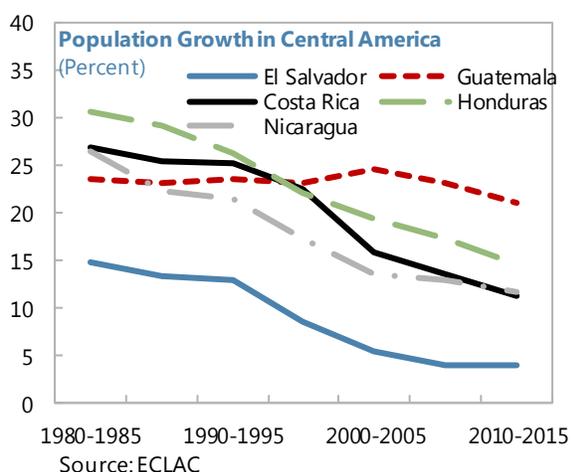


Source: Migration Policy Institute tabulation from US decennial surveys and American Community Survey and the World Bank.



Source: ECLAC.

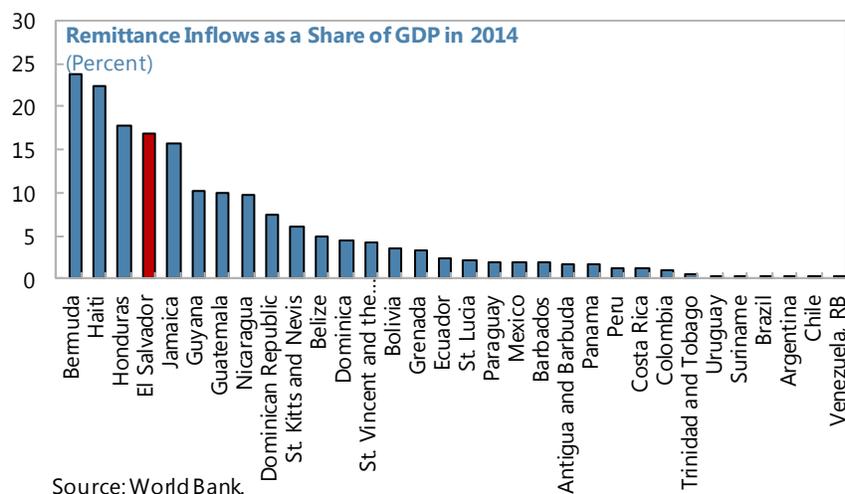
21. **Higher outward migration from El Salvador has visibly contributed to lower population and labor market growth.** Over the past 35 years, the Salvadoran population growth has been consistently the lowest in Central America. To a significant extent this reflects the impact of migration. In particular, survey data indicate that a significant proportion of migrants from Central America are relatively young. Thus, El Salvador has seen the lowest growth rate in the young population among its Central American peers. The lower growth of younger population would translate into fewer entrants into the labor market. This apparent comparative deficit of younger labor force may have major implications for the economy: the young are typically the more productive and flexible part of the labor force.



22. **Recent studies suggest that persistent emigration tends to dampen growth in sending countries.** IMF (2016) assessed the impact of emigration on Eastern European countries and concluded that the growth in the countries that send the highest percentage migrants may have been shaved by 0.6-0.9 percentage point annually, with two-thirds of the effect due to the direct impact of migration on labor supply and with remaining one-third due to the skill deterioration given that more skilled population tended to emigrate. There is no comparable data on the differences in skills for Salvadoran migrants, but available survey information suggests that they also tend to be more skilled than the population that is left in the country. Given that the overall magnitude of the migrant flows is broadly comparable between El Salvador and the Eastern European countries in question (around a quarter of the population), it may be reasonable to posit that the impact on growth could be significant for El Salvador. However, caution is warranted in deriving specific estimates given the need for more precise information on the characteristics of emigration process from El Salvador.

F. Role of Remittances

23. **Remittances are an important source of private sector income for Central America and El Salvador in particular.** Among the countries in the Central American region, remittances inflows are particularly high for Honduras, El Salvador, Guatemala, and Nicaragua, where they account for 10-20 percent of GDP. For these and some other countries, remittances tend to be comparable to trade and capital flows and often dwarf FDI inflows. The ongoing cross-border financial integration and financial deepening has substantially reduced cost barriers and contributed to further growth in remittances. Increasing globalization and continuing migration and financial innovation suggest that remittances should remain an important macroeconomic variable going forward.



24. **Remittances to Central America, and El Salvador, have a number of distinguishing features.** Unlike European countries, most of the migration that gives rise to remittances is permanent. The average sender from the US to CA is 35-45 years old, up to half are illegal, and the bulk (80-90 percent) work in low-level services jobs. The propensity to send remittances by a given sender typically declines over time: according to BCR (2011) about 70 percent of those who were sending remittances to El Salvador had emigrated within 15 years. Remittances are progressively weakened by both the family unification process and the loss of ties with former homeland: according to surveys 53 percent of those who are not sending remittances cite family unification in the US as a reason.

25. **There is growing research on the role of remittances in economic performance both globally and in Latin American countries, though results are not always clear-cut.** Research has focused on the impact of remittances on poverty, inequality and human capital, labor market effects, as well as implications for growth, investment, and financial sector development. While remittances have been robustly linked to better social outcomes (poverty and inequality) and human capital, their effects on growth and investment have been ambiguous. Thus, Fajnzylber and Lopez (2006) find positive effects of remittances on growth, while Chami et al. (2008) reach a conclusion of no or even a negative effect. The mixed results partly reflect: (i) conceptual ambiguities, whereby remittances are believed to positively affect consumption but much less so investment, while Dutch-disease-type effects may dampen competitiveness; (ii) difficulties in consistently measuring remittances over a long time horizon, (iii) offsetting macroeconomic effects between migration and remittances (see Clemens and McKenzie 2014), and (iv) different country coverage of empirical studies in light of likely different country-specific effects of remittances. The most recent literature (IMF 2016) suggests that remittances play a positive role for growth via supporting consumption, but that the economic drag from the migration that accompanies remittances is very significant.

26. **Time series regression analysis suggests robust positive short-term association of remittances with growth in El Salvador, Guatemala, and Honduras.** Regressing quarterly GDP growth on the external determinants for each Central American country, including US GDP growth

and petroleum prices, as well as seasonal and crisis dummies, yields significant coefficients of a similar magnitude. In addition to directly supporting growth, high-frequency data indicate a positive association of growth in remittances with bank credit growth as well as a negative association of remittances with the level of non-performing loans. These would be consistent with the hypothesis that the banking system helps amplify the effects of remittances on growth.

Table 1. Dependent Variable: Real GDP growth for Respective Country (2006-15)

	El Salvador	Guatemala	Honduras
Remittances growth 1/	0.10***	0.15***	0.11**

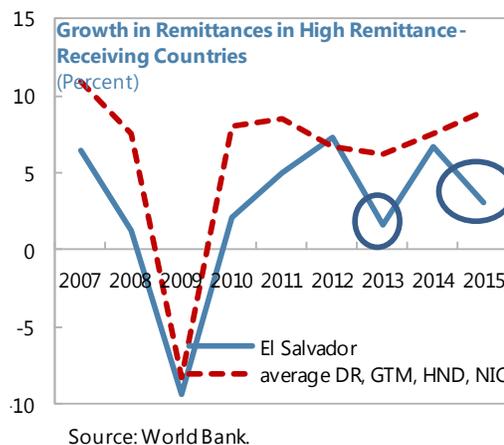
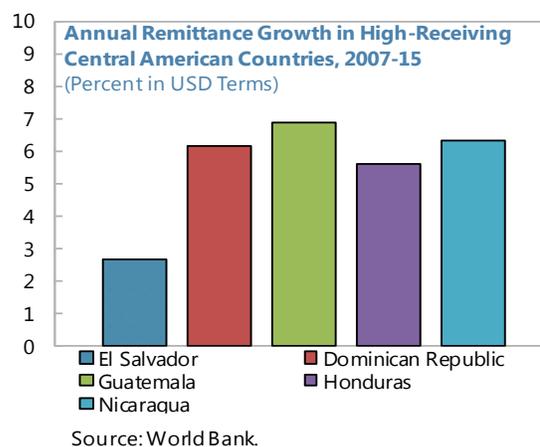
(Seasonal dummies and 2009Q1 crisis dummy included but not reported)

1/ For El Salvador, regressions yield the same coefficient with nominal and real remittances growth. Additional robustness check included an error correction model that includes a co-integrating relationship between US and SLV GDP.

2/ Significance assessed with t-statistics at 10%, 5%, and 1% levels respectively.

3/ Regressions pass all key diagnostics tests for normality, heteroscedasticity, etc. While reverse causality cannot be ruled out, panel regressions mitigate those concerns, as remittances show little sensitivity to Central America's own-macrovariables.

27. **However, El Salvador does not appear to enjoy the benefits of remittances as much as could be expected based on underlying migration levels and trends.** In fact, in recent years, growth of remittances in El Salvador was below that of other key remittance-receiving countries in Central America. And while El Salvador has by far the largest stock of emigrants as a proportion of the population, it is no longer the largest receiver of remittance flows in Central America as a proportion of own-GDP (ceding the primacy to Honduras). It seems that the earlier pattern of migration, coupled with more advanced family reunification process and loss of family ties have been playing a role. Other potential explanatory reasons include different methods of measuring remittances, lower economic opportunities for generating investments in El Salvador (due to lower economic growth), as well as effects from periodic renewals of the temporary protection status (This status is more relevant for El Salvador than for other countries in the region, and entails a substantial cost for the Salvadoran families living in the US. It played a role in dampening remittances during several years, including most recently in 2013 and 2015).



G. Conclusions

28. **El Salvador's low growth reflects a complex interaction of many factors.** Most of these have already been studied in detail. The most compelling explanation regards vicious cycles, whereby low growth interacts with high crime, outward migration, consumption bias, and low savings thereby entrenching the problems further. This note has highlighted that outward migration is not only endogenous, but, in the Salvadoran case, may have an exogenous, path-dependent component. It will likely have substantial "direct" negative effects on growth both through the "production function" effect and the compositional effects affecting the skilled and the young. Based on an analysis of remittances, they appear to be more of a mitigant, and an underused opportunity, than a source of the problem. Large data gaps should however preclude strong conclusions at this stage, as these effects have yet to be carefully quantified.

29. **These additional angles do not drastically change key policy conclusions.** The main direction of reforms to address low growth and high emigration would be the creation of sustainable jobs in the formal sector, particularly in tradables. The authorities' strategy of "productive transformation" pursues this objective, but it should be based on a broad-based consensus to overcome political polarization and instill private sector confidence. Reducing crime would tackle the key underlying driver of emigration, as well as engage the Diaspora through investment, tourism, as well as more durable incentives to maintain ties with El Salvador. Public sector policies should be aimed at rationalizing taxes, improve the business climate, rebalance spending toward much-needed public investment, and public wage moderation to avoid crowding out sustainable jobs in the tradable sector.

References

- Amaya, P. and O. Cabrera (2013), "La Transformación Estructural: Una solución a la trampa de Bajo Crecimiento Económico," Documento de Trabajo. Banco Central de Reserva de El Salvador, Primer semestre.
- Benoni C. and S. Lindahl (2014), "Dollarization in Ecuador and El Salvador - Its Impact on Fundamental Macroeconomic Variables," University of Gothenburg.
- BCR (2011), "Los Salvadoreños en Estados Unidos, Sus Remesas Familiares y el Impacto de la Crisis Económica," Documento de trabajo 01/2011. Banco Central de Reserva de El Salvador,
- Chami, R, A. Barajas, T. Cosimano, C. Fullenkamp, M. Gapen, (2008) "Macroeconomic Consequences of Remittances," IMF Occasional Paper No 259, 2008.
- Clemens M. and D. McKenzie (2014) "Why Don't Remittances Appear to Affect Growth?" CGD Working Paper 366, Washington, DC: World Bank.
- Fajnzylber P. and Lopez H. (2006) "Remittances and Development: Lessons from Latin America," World Bank, Washington DC.
- Fusades (2014) "La necesidad de un ajuste integral ante una situación fiscal grave," Posición institucional No 46, junio.
- Hausmann R, Rodrik D, and A. Velasco (2005), "Growth Diagnostics,," mimeo, Harvard University.
- Hausmann, R., B. Kingler, and R. Wagne (2009) "Doing Growth Diagnostics in Practice: A 'Mindbook'," CID Working Paper No. 177.
- IMF (2013), "El Salvador: Staff report for the Article IV Consultation," IMF Country report 13/132.
- IMF (2015), "El Salvador: Staff report for the Article IV Consultation," IMF Country report No 15/13.
- IMF (2016), forthcoming, "Should They Stay or Should They Go? Economic Impact of Emigration on Eastern Europe," IMF Staff Discussion Note.
- Ponce R. and L. Espinosa (2009), "Did Dollarization in El Salvador Have a Negative Effect on its Economic Development?" Comercio Exterior, November.
- Swiston A. (2011) "Official Dollarization as a Monetary Regime: Its Effects on El Salvador," IMF Working Paper, WP/11/129.

US/El Salvador governments (2011) "Partnership for Growth: El Salvador Constraints Analysis," joint US government and El Salvador technical team, July.

World Bank (2015) "*El Salvador - Systematic country diagnostic : building on strengths for a new generation.*" authored by Calvo-Gonzalez, Oscar and Lopez, J. Humberto, Washington, D.C. : World Bank Group. <http://documents.worldbank.org/curated/en/2015/06/24706162/el-salvador-systematic-country-diagnostic-building-strengths-new-generation>.

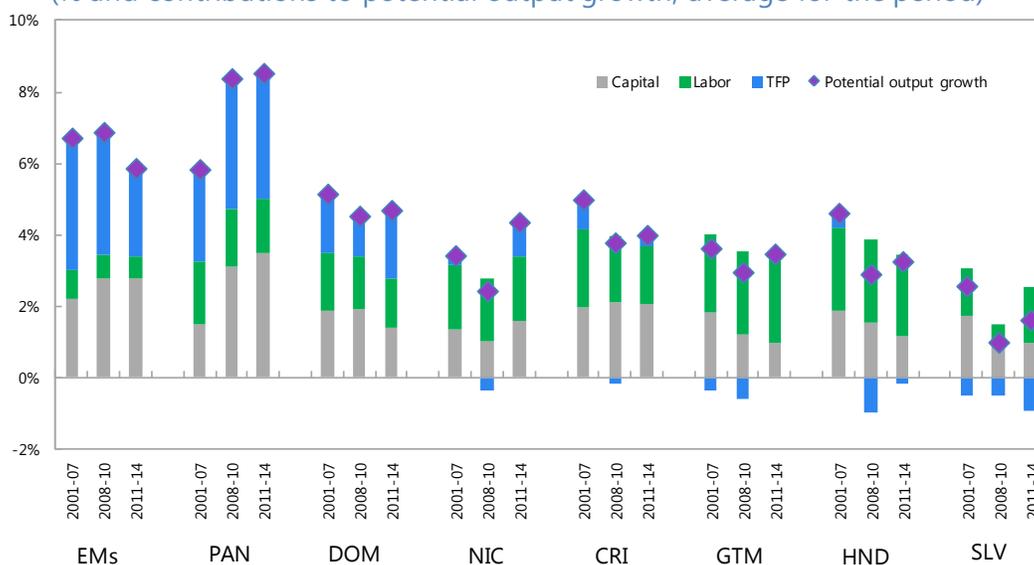
EL SALVADOR: POTENTIAL GROWTH¹

This paper constructs estimates of potential output growth and the output gap for El Salvador, and compares it to other Central American countries. It examines potential growth before and in the aftermath of the global financial crisis its likely trajectory in the medium-term. Findings are that pre-crisis potential growth was the lowest in the region, and it declined after the crisis mostly due to lower capital accumulation and persistent negative TFP growth, which have not recovered to pre-crisis rates. Looking forward, potential growth is expected to reach 1.9 percent in the medium-term due to constraints to capital and employment growth, and low TFP growth. There are no indications of significant economic slack in 2015.

- Pre-crisis potential growth in El Salvador was well below that of other Central American economies.** Potential growth was 2.6 percent during 2001–07, significantly lower than other Central American economies where potential growth was at least 3.4 percent (and as high as 5.8 percent in Panama). Lower potential growth in El Salvador reflected lower capital and employment growth, and negative TFP growth. Notably, strong TFP growth explained high potential growth in Costa Rica, the Dominican Republic, and Panama, as well as high capital stock growth in the first two countries, and high employment growth in Costa Rica. Robust potential growth in Honduras was explained by rapid capital accumulation and strong employment growth.

Determinants of Potential Output Growth

(% and contributions to potential output growth, average for the period)



Source: IMF staff estimates.

- TFP growth was persistently negative in El Salvador in the years before the crisis.** This was the case in Guatemala also, and productivity growth in Honduras and Nicaragua was not high

¹ Prepared by Iulia Teodoru.

either compared to Costa Rica, the Dominican Republic and Panama, which saw significant improvements in TFP growth. Productivity shortfalls in El Salvador may reflect, among other factors, lags in investment in R&D and adoption and development of new technologies. Lower human capital growth (El Salvador saw a significant decline in human capital growth from 2001 to 2007) and migration of high-skilled workers seem to have hampered TFP growth. Productivity gains were also hindered by a lack of competition and high market concentration. Weak business environment, including political and economic uncertainty, poor security, high red tape and corruption, lack of legal/judicial stability, high costs of infrastructure and poor quality are additional factors.

3. **Along with negative productivity, capital stock growth was among the lowest in the region during 2001–07.** The growth of the capital stock was on average 4.9 percent, compared to over 5.2 percent in Costa Rica, the Dominican Republic, Guatemala, and Honduras. Capital goods imports were booming in these economies in the mid-2000s and as a consequence there was an overhauling of physical capital (this was not the case in El Salvador and Nicaragua).

4. **Pre-crisis employment growth lagged behind neighboring countries.** It was about 2 percent during 2001–07, likely due to a decline in the labor force participation given continuous outward migration. Employment growth in Costa Rica, Guatemala, and Honduras was at least 3.3 percent, while the Dominican Republic, Nicaragua and Panama saw lower rates below 3 percent, but higher than in El Salvador.

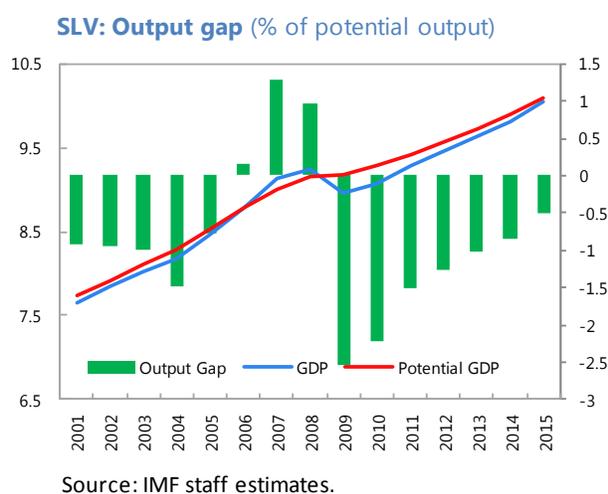
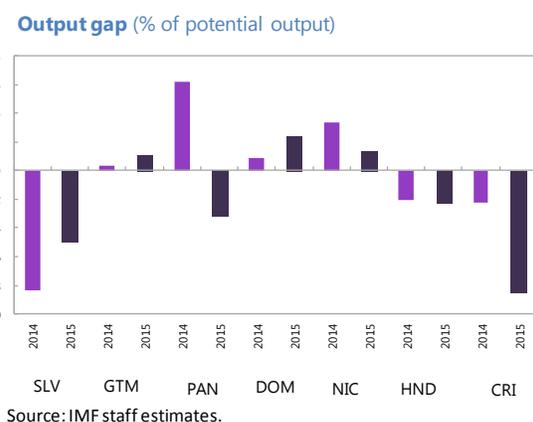
5. **The global financial crisis had a substantial negative impact on growth in Central America, including in El Salvador.** Potential growth declined from 2.6 percent to 1 percent in El Salvador in the aftermath of the crisis (i.e. from 2001–07 to 2008–10). Most other Central American economies experienced significant declines as well. Notably, potential growth declined by over 1 percentage point in Costa Rica, Honduras, and Nicaragua, and less than 1 percentage point in the Dominican Republic and Guatemala. Only Panama saw an increase in potential growth by 2.5 percentage points. While some countries (Costa Rica, the Dominican Republic, Honduras, and El Salvador) saw a recovery in potential growth in 2011–14, the rates remain lower compared to their pre-crisis rates. Only Nicaragua saw a significant boost in potential growth in 2011–14 that surpasses pre-crisis rates.

6. **Large declines in capital stock growth accounted for most of the decline in potential growth in the region after the crisis.** In El Salvador, capital growth dropped by 2 percentage points from 2001–07 to 2008–10, the largest drop in Central America (with Guatemala being the only country experiencing a similar drop). Honduras and Nicaragua experienced falls in capital growth in the magnitude of 1 percentage point, while the other countries' capital growth was not affected by the crisis, or in the case of Panama, the expansion of the canal brought about an expansion in capital growth (of almost 5 percentage points). In several Central American economies, capital growth continued its downward trend in 2011–14 (i.e. El Salvador, Guatemala, and Honduras). The Dominican Republic saw a significant fall in capital growth in 2011–14 after the increase it experienced from 2001–07 to 2008–10. Only Nicaragua saw a significant boost in capital growth in 2011–14 that surpassed pre-crisis rates.

7. **TFP growth declined after the crisis, but has since recovered in some countries.** TFP growth declined in many Central American economies by up to 1.4 percentage points from 2001–07 to 2008–10, but has recovered and surpassed pre-crisis rates in the Dominican Republic and Nicaragua (and in Guatemala where it turned slightly positive from negative pre-crisis rates) in 2011–14. Its contribution to potential growth is 2 percent in the Dominican Republic and 3.5 percent in Panama. These two latter countries have the highest TFP growth in the region. In El Salvador, however, TFP growth continued at similar negative rates following the crisis, which worsened thereafter in 2011–14 (reaching negative 1 percent). In Costa Rica and Honduras, TFP growth has also not recovered to pre-crisis rates.

8. **Employment growth declined significantly in some Central American economies after the crisis.** It declined by about 1.4 percentage points in El Salvador, likely due to a lower labor force participation rate due to continued migration. However, it has recovered and surpassed pre-crisis rates, reaching 2.5 percent in 2011–14. Within the Central American region, Guatemala experienced a continued increase throughout the 2001–14 period, while other economies went through important declines in employment growth after the crisis (e.g. in Costa Rica, the Dominican Republic, and Panama). El Salvador's employment growth is still lagging behind Guatemala, Honduras, and Nicaragua.

9. **From a cyclical perspective, El Salvador's economy is assessed to be operating slightly below potential in 2014–15.** Core inflation has fallen since 2012 and has been negative more recently, and labor market conditions appear to be improving. The output gap is negative at 0.5 percent of potential output (having shrunk from negative 1 percent in 2013), while the unemployment gap is negative at 0.4 percent of the NAIRU in 2015, both having shrunk since the crisis when the output and unemployment gaps turned substantially negative. There was significant slack immediately after the crisis (the output gap turned from 1 percent to -2.5 percent).

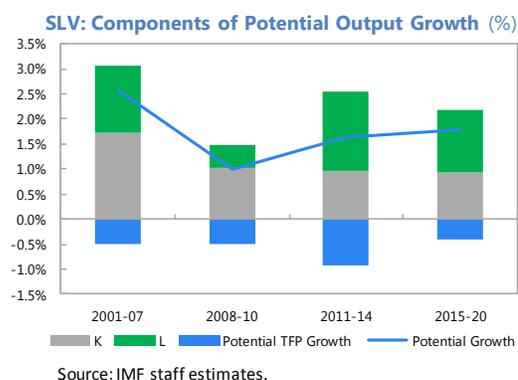


10. **Potential growth in El Salvador is likely to remain below pre-crisis rates in the medium term.** Prospects for the components of potential growth—labor, capital, and TFP—are considered over the period from 2015 to 2020. The scenario analysis builds on the analysis of potential growth

until 2014 and extends it, based on projected demographic patterns, prospects for capital growth, and improvements in TFP growth. These scenarios are subject to significant uncertainty, as a number of country-specific factors could influence potential growth, and the evolution of TFP growth in the medium term. Finally, these scenarios do not assume policy changes that could boost potential growth in the medium term.

11. These scenarios for the components imply that potential growth in El Salvador is likely to reach 1.8 percent in the medium term.

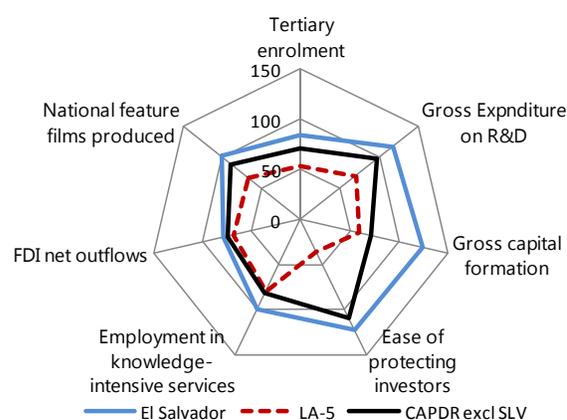
The working-age population growth is expected to decline, while labor force participation is expected to increase by less, resulting in slightly lower employment growth. Investment-to-capital ratios have not changed much since 2011 and are likely to continue at the same rates. This is because of less favorable external financing conditions, and weaknesses in the institutional, regulatory, and legal environment. TFP growth is expected to remain below pre-crisis rates over the next six years, and is projected at the 2002-2014 average growth rates, also consistent with more sluggish potential growth in advanced economies, and thus no positive spillovers from them.



12. If, on the other hand, TFP performance improves significantly, the impact on potential growth could be substantial.

Relative to the region and emerging markets, El Salvador performs poorly in various facets of innovation such as spending on R&D, tertiary enrollment rates, number of patent applications, FDI inflows, ease of protecting investors, knowledge-intensive employment, and creative services exports. Enhancing R&D/technological diffusion will require strengthening institutions, human capital and research, achieving higher business and market sophistication, and competition in product and labor markets. Important improvements in the quality of schooling are needed to enhance human capital.

Global Innovation Index, 2015



13. Policies should also prioritize mobilizing domestic savings to invest and build a higher capital stock.

Investment-to-capital ratios are lowest in El Salvador compared to the region, and much lower compared to emerging markets. Attracting private domestic and foreign investment will require reducing policy uncertainties, strengthening institutions to secure property rights and reduce red tape and corruption, ensuring legal and judicial stability, and improving security. Higher and more efficient public investment is critical to address infrastructure deficiencies.

14. **Removing labor market rigidities and reducing informality will improve labor productivity.** World Economic Forum-based surveys suggest certain labor market rigidities in El Salvador, including inefficiencies in wage determination, alignment of pay with productivity, capacity to retain talent, mismatches between skills and jobs. Facilitating access to social security systems, reducing tax distortions, simplifying tax filing and business licensing procedures are reforms that would help reduce informality.

Annex I. Methodology

The multivariate filter approach specified in this selected issues paper requires data on three observable variables: real GDP growth, CPI inflation, and the unemployment rate. Annual data is used for these variables for the 7 countries considered. In this section, we present the equations which relate these three observable variables to the latent variables in the model. Parameter values and the variances of shock terms for these equations are estimated using Bayesian estimation techniques.

In the model, the output gap is defined as the deviation of real GDP, in log terms (Y), from its potential level (\bar{Y}):

$$(1) \quad y = Y - \bar{Y}$$

The stochastic process for output (real GDP) is comprised of three equations, and subject to three types of shocks:

$$(2) \quad \bar{Y}_t = \bar{Y}_{t-1} + G_t + \varepsilon_t^{\bar{Y}}$$

$$(3) \quad G_t = \theta G^{SS} + (1 - \theta)G_{t-1} + \varepsilon_t^G$$

$$(4) \quad y_t = \phi y_{t-1} + \varepsilon_t^y$$

The level of potential output (\bar{Y}_t) evolves according to potential growth (G_t) and a level-shock term ($\varepsilon_t^{\bar{Y}}$). Potential growth is also subject to shocks (ε_t^G), with their impact fading gradually according to the parameter θ (with lower values entailing a slower adjustment back to the steady-state growth rate following a shock). Finally, the output-gap is also subject to shocks (ε_t^y), which are effectively demand shocks.

All else equal, output would be expected to follow its steady-state path, which is shown above by the solid blue line (which has a slope of G^{SS}). However, shocks to: the level of potential ($\varepsilon_t^{\bar{Y}}$); the growth rate of potential (ε_t^G); or the output gap (ε_t^y), can cause output to deviate from this initial steady-state path over time. As shown by the dashed blue line, a shock to the level of potential output in any given period will cause output to be permanently higher (or lower) than its initial steady-state path. Similarly, shocks to the growth rate of potential, illustrated by the dashed red line, can cause the growth rate of output to be higher temporarily, before ultimately slowing back to the steady-state *growth rate* (note that this would still entail a higher *level* of output). And, finally, shocks to the output gap would cause only a temporary deviation of output from potential, as shown by the dashed green line.

In order to help identify the three aforementioned output shock terms, a Phillips Curve equation for inflation is added, which links the evolution of the output gap (an unobservable variable) to observable data on inflation according to the process:

$$(5) \quad \pi_t = \lambda\pi_{t+1} + (1 - \lambda)\pi_{t-1} + \beta y_t + \varepsilon_t^\pi$$

Finally, equations describing the evolution of unemployment are included to provide further identifying information for the estimation of the output gap:

$$(6) \quad \bar{U}_t = (\tau_4 \bar{U}^{ss} + (1 - \tau_4)\bar{U}_{t-1}) + g\bar{U}_t + \varepsilon_t^{\bar{U}}$$

$$(7) \quad g\bar{U}_t = (1 - \tau_3)g\bar{U}_{t-1} + \varepsilon_t^{g\bar{U}}$$

$$(8) \quad u_t = \tau_2 u_{t-1} + \tau_1 y_t + \varepsilon_t^u$$

$$(9) \quad u_t = \bar{U}_t - U_t$$

Here, \bar{U}_t is the equilibrium value of the unemployment rate (the NAIRU), which is time varying, and subject to shocks ($\varepsilon_t^{\bar{U}}$) and also variation in the trend ($g\bar{U}_t$), which is itself also subject to shocks ($\varepsilon_t^{g\bar{U}}$)—this specification allows for persistent deviations of the NAIRU from its steady-state value. Most importantly, we specify an Okun's law relationship wherein the gap between actual unemployment (U_t) and its equilibrium process (given by u_t) is a function of the amount of slack in the economy (y_t).

Equations 1–9 comprise the core of the model for potential output. In addition, data on growth and inflation expectations are added, in part to help identify shocks, but mostly to improve the accuracy of estimates at the end of the sample period:

$$(10) \quad \pi_{t+j}^C = \pi_{t+j} + \varepsilon_{t+j}^{\pi^C}, j = 0,1$$

$$(11) \quad GROWTH_{t+j}^C = GROWTH_{t+j} + \varepsilon_{t+j}^{GROWTH^C}, j = 0, \dots, 5$$

For real GDP growth ($GROWTH$) the model is augmented with forecasts from the WEO for the five years following the end of the sample period. For inflation, expectations data are added for one year following the end of the sample period. These equations relate the model-consistent forward expectation for growth and inflation (π_{t+j} and $GROWTH_{t+j}$) to observable data on how WEO forecasters expect these variables to evolve over various horizons (one to five years ahead) at any

given time ($GROWTH_{t+j}^C$). The ‘strength’ of the relationship between the data on the WEO forecasts and the model’s forward expectation is determined by the standard deviation of the error terms ($\varepsilon_{t+j}^{\pi^C}$ and $\varepsilon_{t+j}^{GROWTH^C}$). In practice, the estimated variance of these terms allows WEO data to influence, but not completely override, the model’s expectations, particularly at the end of the sample period. In a way, the incorporation of WEO forecasts can be thought as an heuristic approach to blend forecasts from different sources and methods.

The methodology requires taking a stance on prior beliefs regarding a number of variables. A key assumption fed into the model’s estimation is that supply shocks are the primary source of real fluctuations in Central America. The prior belief that supply is more volatile than demand leads the model to assign much of observed volatility of real GDP to potential GDP fluctuations. In addition to the prior distributions of parameters, values for the steady-state (long-run) unemployment rate and potential GDP growth rates are provided.

	Steady-State Unemployment Rate	Steady-State Potential Output Growth	
	(%)	(%)	
CRI	6.5	4.5	GDP
DOM	14.0	5.0	
GTM	3.0	3.5	the
HND	4.0	4.0	
NIC	7.0	3.5	
PAN	5.0	6.5	
SLV	5.3	2.0	

After obtaining estimates of potential output and NAIRU from the multivariate Kalman filter, potential TFP is calculated as a residual in the Cobb-Douglas function:

$$A_t = Y_t / K_t^\alpha L_t^{1-\alpha}$$

where Y_t is potential output, K_t and L_t are capital and labor inputs, while A_t is the contribution of technology or TFP. Output elasticities (α is the capital share in the production function and is set at 0.35) sum up to one.

The capital stock series is constructed using a perpetual inventory method where the level of initial capital stock for a given year, 1990 in our case, is calculated assuming a constant level of depreciation rate of 5 percent per annum and a constant investment share of GDP.

A FISCAL RESPONSIBILITY LAW AND FISCAL RULE FOR EL SALVADOR: A CROSS-COUNTRY VIEW¹

El Salvador is mulling adoption of a fiscal responsibility law (FRL) and fiscal rules, as part of a broader trend in Central America. But the process is complicated by weak institutions, frequent shocks and slippages, and difficult politics. This paper assesses El Salvador's capacity and options to upgrade its fiscal framework, in a comparative perspective. Fiscal institutions need to be enhanced via better procedures and a track record of budget implementation. The draft FRLs prepared in El Salvador contain useful procedural proposals, but can be further strengthened. In parallel, El Salvador may gradually move toward rule-based fiscal policy. An error correction budget balance rule with some counter-cyclical elements may offer an option with some resilience to slippages and political polarization. An expenditure rule could be another workable option provided there is broad-based political support.

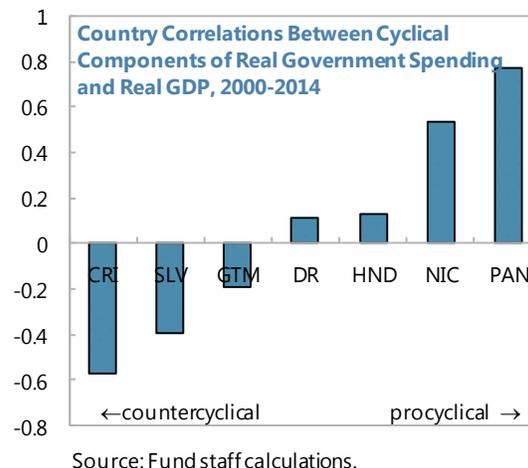
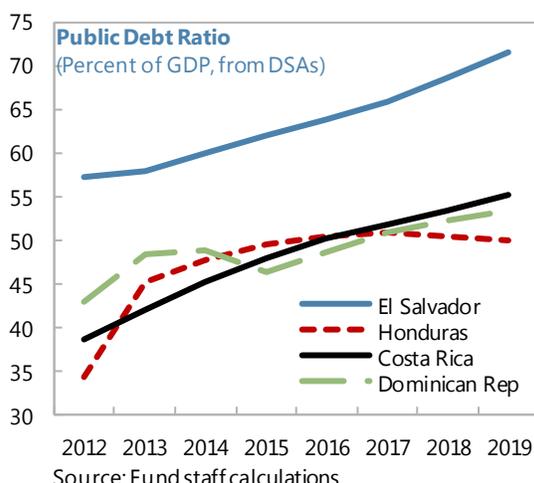
A. Background

1. **El Salvador is one of several Central American (CA) countries that are considering introducing fiscal rules.** Until recently, Panama has been the only CA economy that had formally adopted a numerical fiscal rule (in 2002). Specific proposals have recently emerged in Honduras, El Salvador, and Costa Rica to revamp their fiscal frameworks by strengthening budget procedures and introducing formal fiscal rules.² In Honduras, this process was recently completed with an FRL enacted in April 2016. In El Salvador, several alternative FRL drafts have been proposed by various political parties in 2012-15, but a comprehensive agreement could not be reached. The Salvadoran fiscal responsibility debate intensified in early 2016 in the context of a proposed pension reform and the need for substantial sovereign borrowing.
2. **The main rationale for the renewed focus on the FRLs in El Salvador – and the broader Central America – appears to be fiscal sustainability.** There are three typical reasons for introducing fiscal rules (IMF, 2009): (i) achieving fiscal sustainability; (ii) reducing pro-cyclicality; and (iii) optimizing government size. In Central America, the recent slew of proposals has been particularly concentrated in countries with fiscal sustainability risks. By contrast, the issues of reducing pro-cyclicality and affecting government size seem somewhat less pressing for El Salvador and Central America in general. With respect to cyclicality, some countries in Central America were assessed as having avoided a pro-cyclicality bias that had characterized much of Latin America in

¹ Prepared by Bogdan Lissovlik.

² Even in Central American countries that did not initiate formal fiscal rules proposals, there has been a broader debate discussing the possibility of such rules.

the more distant past (see Klemm (2014)).³ In El Salvador in particular, fiscal policy appeared to be on balance countercyclical over the past 15 years, although this may well have reflected happenstance rather than purposeful fiscal policy. With respect to the size of government, there is no clear-cut, directional rationale for El Salvador to reduce (or increase) the size of government.⁴



3. **CA countries have many similar specific features that are relevant in the context of fiscal rules and procedures.** First, these are relatively small, emerging economies (but not “micro”-states). Second, they are subject to frequent shocks, because of their limited size, susceptibility to natural disasters, and some (moderate) commodity dependence. Third, their balance of payments structure is broadly similar: net petroleum importers with significant dependence on agricultural commodities’ exports, as well as remittances. Fourth, CA countries have high informality and inequality (much like other LA countries). Fifth, partly reflecting the high share of the informal sector, the quality of data and economic institutions is relatively low, although there is a significant variation among CA countries. The above factors complicate the case for formal fiscal rules, but at the same time indicate large potential gains from better fiscal institutions. These similarities indicate that any rule adoption process could well be subject to emulation: good proposals and examples of performance in one CA country could be powerful beacons for others, as long as they are consistent with country-specific characteristics.

³ The assessment of “reduced pro-cyclicality” is based on a purely technical analysis of fiscal policy outcomes that may or may not be confirmed with a more detailed assessment of underlying policy drivers.

⁴ A few years ago El Salvador was considered a country with a low size of government compared to peers, but in the last few years its spending/GDP ratio rose substantially.

4. **El Salvador's fiscal sustainability challenge additionally differs from its regional peers across several important dimensions:**

- **A combination of high public debt and low growth.** El Salvador's debt ratio, at over 60 percent of GDP, is higher than that of other CA countries, where it is typically in the range of 20-50 percent of GDP. This difference partly reflects measurement issues due to the nature of the Salvadoran pension system, with explicit pension-related debt amounting to 14 percent of GDP at end-2015. However, even after accounting for this feature, El Salvador's effective public debt burden would still be substantially higher than in its regional peers.⁵ The ultimate reason for the high and growing debt are fiscal deficits: while these do not look overly high from a cross-country perspective, they have been far from sufficient to stabilize debt given the low growth.
- **Full dollarization.** El Salvador's fully-dollarized regime significantly reduces policy options and puts a much greater weight on fiscal policy.⁶ The absence of an effective lender-of-last-resort capacity implies that El Salvador, other things equal, would require larger fiscal buffers to deal with various shocks and emergencies.
- **Political polarization.** A legacy of the civil war of the 1980s is the relatively high political polarization of the Salvadoran society, whereby the two main parties (FMLN and ARENA) continue to harbor stark ideological differences. According to a study by the University of Salamanca, the Salvadoran parliament is by far the most polarized in Latin America (see World Bank, 2015).

5. **An analysis of the case for fiscal rules in El Salvador requires a detailed assessment of country-specific circumstances balanced against international and regional experience and best practices.** The paper aims to assess these issues, and is structured as follows. Section B assesses international experience with the application of fiscal rules, with particular reference to the circumstances in the region (Latin America, and particularly CA). Section C offers a diagnostic of El Salvador's situation and section D describes the current proposals by the authorities (and other political forces in the country) to improve the fiscal framework. Section E provides recommendations focused on improving fiscal procedures and other aspects that stem from the authorities' main proposals, and Section F discusses alternative options of introducing a numerical fiscal rule that could be sound from a technical perspective.

⁵ This reflects (i) significant problems in the sustainability of the pension system (see Selected Issues paper on pensions); (ii) liabilities that are not fully recorded as public debt (see the debt sustainability analysis); and (iii) a forthcoming downward revision of El Salvador's nominal GDP.

⁶ While the full dollarization feature is shared by a couple of countries in the broader region, Panama and Ecuador, these latter economies have important specificities (financial sector center and Canal dominance in the case of Panama, and petroleum resources in the case of Ecuador) that need to be taken into account.

B. Distilling Lessons for CA from International Experience

General Lessons

6. **To date, worldwide experience with numerical fiscal rules has been encouraging on balance, but the evidence is preliminary and not clear-cut.** The mere *existence* of rules appears to be correlated with better fiscal outcomes, both in terms of fiscal sustainability and lessened procyclicality (IMF 2012, 2014). However, major caution for interpreting these results is warranted. In particular, the regression analysis on these issues is affected by the relatively short time-span and low granularity of data and limited control variables and hence it is impossible to rule out reverse causality or omitted variable bias (IMF (2012, 2015a)). And even if causality were established, it may reflect temporary “honeymoon effects” of rule adoption rather than structural factors.⁷ Also, to meaningfully measure and interpret the links one would need consistent and detailed cross-country data on the design and implementation characteristics of fiscal rules. Existing data may be too coarse or subjective for these purposes.⁸

7. **From the standpoint of rule design, a menu of options can be tailored to country circumstances.** IMF (2015c) proposes a two-tiered structure for a fiscal rule, based on a (i) medium-term fiscal anchor (usually rooted in a public debt objective) and (ii) an operational target, which is typically either a version of a balanced budget rule (BBR) or expenditure rule (ER). (There could also be in principle revenue rules (see IMF 2009), but their use, and recommendation for use, has been infrequent). The BBR is in turn expressed either in nominal (NBBR) or structural (SBBR) terms. The exact choice of optimal rules, or combination thereof, would depend on the circumstances of each country. It is common to use a combination of rules, including a BBR and ER, to alleviate disadvantages of a single-rule approach, but this comes at the cost of increasing complexity that can negatively impact credibility and implementation.

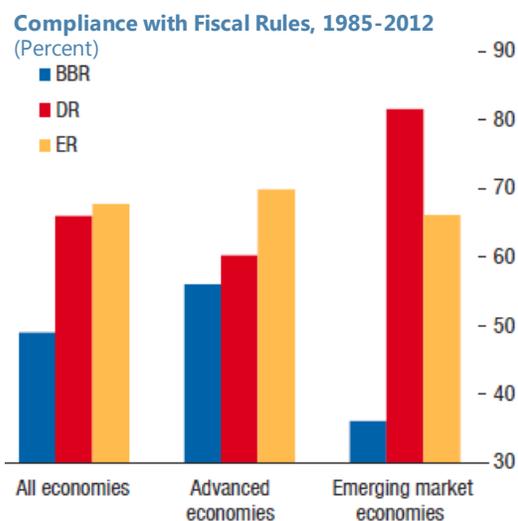
8. **While all rules have pros and cons, the most frequent recommendation has recently been to use an ER as the main operational rule.** ERs offer important advantages such as relative simplicity, counter-cyclicality, and operational guidance (see IMF, 2015a). They are especially effective when reducing or containing the size of government is a key objective. The main perceived disadvantage of ER is its weak link with debt sustainability, requiring effective corrective mechanisms to robustly link the rule with the debt anchor. An additional vulnerability of ER is the risk of creating a tax-expenditure bias, but this could be addressed via upgrading budget procedures.

⁷ For example, the honeymoon effect may reflect temporary “signaling” credibility benefits or willingness of authorities to devote more resources and political capital at the initial stage of fiscal rule operation relative to other stages.

⁸ The data used in the regressions may distinguish among key types of rules, but not their finer characteristics. While availability of a “fiscal rules index” may fill the gap, it will likely do this very imperfectly given the somewhat subjective and arbitrary nature of index construction processes.

9. Imperfect compliance is a key bottleneck to understanding the rules' effects and benefits for economic and fiscal performance.

Regardless of adequacy of rule design, formal non-compliance would significantly undermine credibility, thereby reducing or negating any benefits from the rules. The extent of compliance with the rules varies by country and type of rule, but, at barely above 50 percent on average globally, could not be considered satisfactory. Weak implementation would also obscure the role of rule design and impede its credible operation. Ultimately, compliance depends both on soundness of technical design and strength and durability of commitment to implement the rules. The latter is very difficult to assess over time, as it depends on evolving political and other circumstances that may be volatile and driven by outside forces.



Source: IDB and IMF WEO database, FAD Fiscal Rules Database, IMF (2015a), and Fund Staff Calculations.

10. Expenditure rules are believed to be more technically sound in part because of their better measured implementation so far, but the latter statement is subject to caveats. For now, it has been assessed that compliance with ERs, at 65-70 percent, has been better than with BBRs or debt rules (with the exception of debt rules for emerging market economies). This is consistent with the logic that spending outcomes are more under control of policymakers, thereby favoring an ER relative to alternatives. At the same time, there are caveats to this evidence. First, available measures of compliance tend to exaggerate it for some expenditure and debt rules, especially those that are measured as levels (e.g., in percent of GDP) and are thus often not immediately binding (see IMF (2015a)). Also, expenditure rules tend to be revised or re-defined quite frequently, suggesting that their formal compliance could be better than underlying compliance.⁹ Finally, compliance is assessed as a simple “binary” variable, which may not fully reflect the extent of implementation, quantitatively or qualitatively.¹⁰

Lessons from Latin America (LA) and dollarized peers

11. Case studies of fiscal rules in individual, or sub-groups of, countries offer a complementary perspective tailored to country circumstances and qualitative characteristics.

Despite an inevitable element of subjectivity, such studies may overcome some of the data-related difficulties that affect cross-country empirical analysis. Thus, they could broaden the scope of

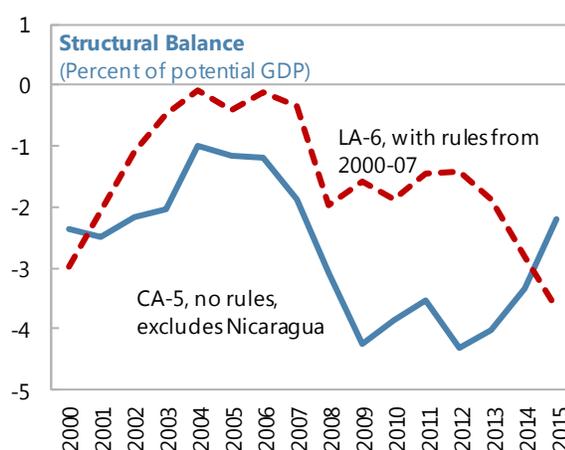
⁹ In particular, expenditure rule tended to be revised frequently in countries where they existed for an extended period of time, such as in Peru and Israel. Among other things, this indicates importance of controlling for the “honeymoon effects.”

¹⁰ For example, small misses should be distinguished from large slippages, while various creative accounting practices can help compliance formally at the expense of underlying fiscal performance.

analysis by internalizing idiosyncratic country circumstances, and not only those that are measurable quantitatively across countries. For example, such an approach could assess the implications of whether the rule (i) was “binding” or not; (ii) was missed/met by a large or small margin; and (iii) was dropped or modified for various reasons. Such case studies could throw more light on the rule design issues by balancing best practices against country circumstances and de-facto experiences.

12. The recent experience of six LA countries could offer useful lessons for Central America and El Salvador. These countries (Brazil, Chile, Colombia, Mexico, Peru, and Uruguay) adopted fiscal rules relatively early among emerging markets, often accumulating a reasonably long track record of performance. LA countries exhibit significant economic and cultural similarities with CA countries, which make them more suitable comparators relative to other parts of the world.¹¹ In turn, CA countries have often emulated, or are looking to emulate, various practices in LA countries, given the latter’s more advanced institutions, easier-to-understand context and experience, and significant flow of technical assistance that they offer. In particular, El Salvador’s draft FRL published by the Ministry of Finance in 2014 was influenced by Colombian experts and proposed various institutional features that had worked in Colombia.

13. A detailed analysis of LA experience with fiscal rules underscores challenges of maintaining compliance over time. IMF (2015b) has conducted an in-depth review of how the rules actually worked in the LA countries, focusing on their compliance features and institutional characteristics. In particular, the fiscal rules tended to be complied with relatively well immediately after adoption, which, for LA countries, often coincided with the period of the global boom that preceded the global financial crisis. However, compliance could not be maintained during the 2008-09 crisis, partly reflecting its unprecedented scale and the needs of a strong countercyclical response. In the aftermath of the crisis, there were attempts to revert to the original rules, but ultimately it did not work: all countries had to either reform the rules or see them progressively derailed with little prospects of returning to the parameters of the original frameworks. Largely reflecting the uneven implementation of the rules, LA’s structural fiscal balances initially improved in 2000-07, when the rules were well-implemented, but deteriorated in subsequent years, fully reversing the gains by 2015.¹²



Source: IDB and IMF WEO database, FAD Fiscal Rules Database, IMF (2015a), and Fund Staff calculations.

¹¹ These include often similar legal and political systems (including some budget procedures and practices), key traits of economic structure (informality and inequality), and the prevalence of Catholic faith and Iberian languages. To be sure, there are also significant differences between LA and CA countries, such as the susceptibility to the commodity super-cycle and a higher size and level of development in the former.

¹² This however also reflects different performance by different countries and the effects of a commodity super-cycle.

14. **In terms of individual country experiences with the rules, those of Chile and to a lesser extent Peru, could be singled out as reassuring.** While each of the rule-based frameworks had some advantages and shortcomings, overall performance varied substantially. Chile was a key positive exception in that the main features of its rule have been preserved and the overall credibility of the framework to a significant extent retained, although the specific path of structural balance targets has had to be continuously adjusted. Peru's performance in meeting specific targets was quite successful, including during the 2009 crisis, partly due to an escape clause that allowed for relaxing the fiscal position without affecting the credibility of the rule. However, Peru's framework that was based on a combination of a nominal budget balance rule and an expenditure rule was not maintained over time, and was replaced by a Chile-type structural balance rule effective since 2015, after a relatively smooth transition. The experience of other LA countries was less re-assuring, with a pattern of "bending the rules" during the 2009 crisis via frequent ad-hoc exceptions or accounting adjustments giving rise to protracted and growing deviation of fiscal indicators from the original targets. This underscored the dangers of making discretionary changes without a medium-term anchor or an exit strategy.

Table 1. Experience with Fiscal Rules in LA-6 Countries

Country (year in effect)	Rule design		Compliance 1/			Rule outcome
	Main strengths	Main weaknesses	Boom	2008-10 Crisis	Post-crisis	
Brazil (2001): NBBR (soft)	sanctions, transparency and reporting, strong sub-national rules	"soft" primary balance target, hardly usable escape clause, pro-cyclical bias	+++	+	+/-	Progressively off-track in 2011-14
Chile (2001, 2006), SBBR	Well-calibrated commodity-adjusted structural balance rule, high-level political commitment, independent forecasting	no escape clause or sanctions, delays in monitoring, complexity of communication	+++	-	++	Off-track and suspended in 2010, MT target of balance in 2018 re-established in 2014 but is now questioned
Colombia (2003, 2011): NBBR (soft)+ER; SBBR since 2012	strong MTEF, MTEF, procedures, and sub-national rules	Soft primary balance target, no escape clause, pro-cyclical bias	+++	-	+/-	Off-track in 2009-10; reformed in 2011
Mexico (2007): NBBR, +ER since 2014	simplicity, escape clause	narrow coverage, pro-cyclical bias	+++	+	+	Reformed in 2013-14
Peru (2000-), NBBR+ER; SBBR since 2015	combination of 2 simple rules, escape clause	narrow coverage of spending rule, pro-cyclicality of deficit rule	++	++	++	Spending rule suspended, deficit rule off-track in 2014; framework reformed in 2013-14
Uruguay (2007), NBBR	Broad coverage and link to the debt objective	pro-cyclical bias	+++	+/-	+/-	Progressively off-track in 2010-14

Source: Author's calculations.

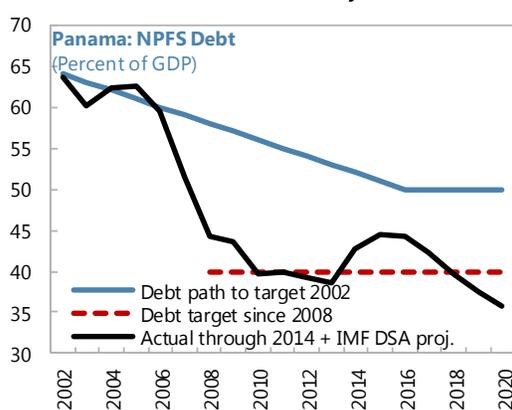
1/ +++ met always; ++ met mostly or essentially (escape clause); + met proforma (ad-hoc adjustments); +/- mixed; - not met

15. **LA performance with fiscal rules highlights the importance of careful preparation and high-quality fiscal institutions, and their upgrading.** Chile's experience in retaining the credibility of the rule and making it a magnet for other countries in the region seems particularly relevant. First, broader fiscal institutional pre-requisites and their continual improvement are important in supporting the rule: in this regard, Chile's institutions have been assessed as relatively advanced in the region, and they continued to improve. For example, a fiscal council was created and other

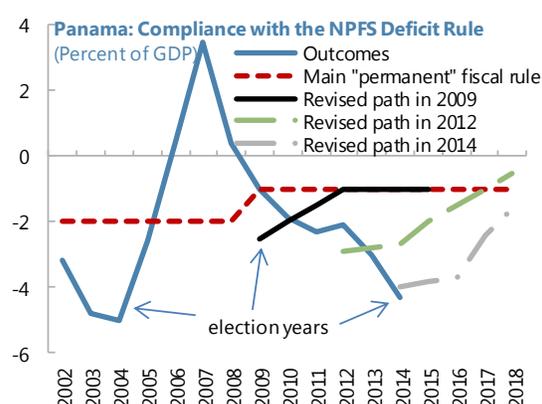
proposals to upgrade institutions were considered in the report of the “Corbo commission” in 2011. Second, careful, hands-on preparation of the rule is essential, including a “transition period” before the rule is formally enacted. Chile’s experience again is interesting: for a decade prior to the adoption of the rule Chile developed a good track record of spending execution. The hands-on informal training is exemplified by Chile’s rule initially having been adopted on an informal basis in 2001, and formalized into law only a few years later, in 2006.

16. **The experience also entailed lessons for good rule design.** First, rules that were designed to lessen pro-cyclicality – such as Chile’s structural balance rule and Peru’s expenditure rule that supplemented the nominal balance budget rule – tended to perform better over time in terms of maintaining medium-term orientation. Also, a well-defined and infrequently used escape clause (e.g., Peru) would also contribute to the countercyclical operations of rules. Finally, a relatively broad coverage of the rules could help limit loopholes and thus ensure intended outcomes.

17. **Panama’s experience with fiscal rules offers an additional perspective particularly relevant for El Salvador.** Panama is arguably a relevant comparator given its small size and full official dollarization, although its special features (e.g., the Canal) affect the comparison. Panama’s performance under the rules introduced in 2002 was mixed. On the one hand, the key operational target on NFPS balance was missed significantly in the first few years under the rule, as well as continuously in the aftermath of the 2009 crisis. On the other hand, the debt objective under the rule was generally achieved on a cumulative basis. The latter result was helped by significant growth overperformance and two upward statistical revisions to nominal GDP. The experience highlights the importance of underpinning operational targets by effective growth-promoting measures, although a large improvement in fiscal deficits (both because of growth and fiscal measures) was also key to accelerated debt reduction. The other lesson is that for such a small economy it may be unrealistic to exactly hit annual targets, so a multi-annual approach that aims to generate a cumulative adjustment sufficient to ensure the targeted public debt trajectory on average would be more realistic. To achieve this flexibility, Panama’s fiscal rules and targets were periodically revised.



Source: Fund staff estimates and calculations.



Source: Fund staff estimates and calculations.

18. **The experience of several dollarized-type economies also offers broader lessons for fiscal rules (see Box 1).** Those countries tend to have more prudent debt (40 percent of GDP) and deficit (often not above 2 percent of GDP) rule-based limits than other economies, which largely

reflects the need for greater fiscal buffers in the absence of lender-of-last-resort and seignorage-raising capacity. Correspondingly, the fully-dollarized economies tend to have on average significantly smaller gross fiscal borrowing requirements than comparable emerging markets, indicating particular caution with respect to the possibility of a fiscal financing stress.

Box 1. Fiscal Rules in Dollarized or Quasi-Dollarized Countries

The dollarized economies have had a variety of BBRs, ER, and DRs.

- **Kosovo.** The rules-based fiscal framework (adopted in 2010 and upgraded in 2013) is designed to protect/preserve the status quo of low debt and deficits. **BBR:** a 2 percent of GDP overall deficit +/- 0.5 pp deviation that could be justified based on cyclical considerations. **DR** a legal debt ceiling of 40 percent of GDP (debt ratio between 30 and 40 percent of GDP is considered a “buffer” zone).
- **Panama.** **DR** (since mid-2009): The FRL sets fiscal rules that limit the public debt ratio (40 percent of GDP). **BBR** (since 2013). The specific budget deficit limits for an adjusted (for contributions to the savings fund for the Panama Canal) balance of the non-financial public sector (NFPS) are 2.9 percent of GDP for 2012, 2.8 percent for 2013, 2.7 percent for 2014, 2.0 percent for 2015, 1.5 percent for 2016, 1.0 percent for 2017, and 0.5 percent from 2018 onwards.
- **Bulgaria.** **ER** (2006-09, from 2012): Ceiling on the expenditure-to-GDP ratio of 40 percent. **BBR** (from 2012): The deficit (in cash terms) cannot exceed 2 percent of GDP. **DR** (Supranational, 2007) the EU Maastricht criteria include a limit of 60 percent of GDP for general government debt.
- **Ecuador.** **ER** (from 2010): The rule states that permanent expenditure cannot be higher than permanent revenue though both are unclearly defined. **BBR** (2003-09): Annual reduction in the non-oil deficit until a balanced budget is achieved. **DR** (2003-09): Reduction to 40 percent of GDP. The rule applied only ex ante and did not bind outcomes.
- **Lithuania.** **ER** (since 2008): If the GG budgets recorded a deficit on average over the past 5 years, the annual growth of the budget appropriations may not exceed one half of (or 0.5 times) the average growth rate of the budget revenue of those 5 years. **DR** (Supranational, 2007) the EU Maastricht criteria include a limit of 60 percent of GDP for general government debt.

Source: IMF/FAD Fiscal Rules Database and national authorities.

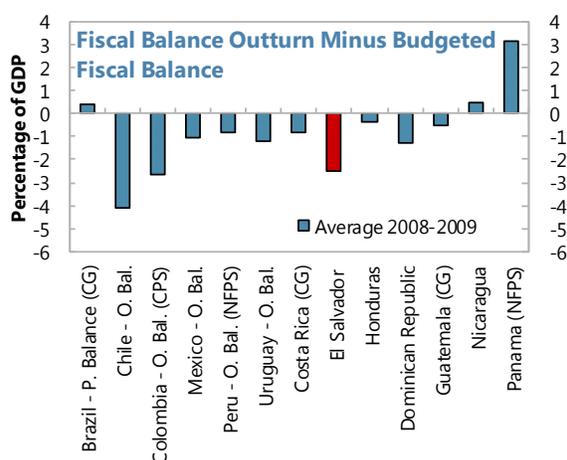
C. A Diagnostic of El Salvador’s Fiscal Capacity

Cross-Country Perspective

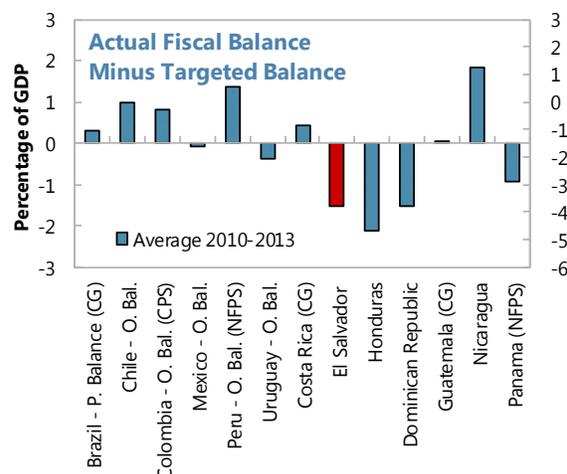
19. **A key issue before introducing fiscal rules would be assessment of fiscal implementation capacity.** Significant elements of this capacity are difficult to measure in a clear way: for example, details of the budget bargaining process are important in this context, but they are generally not observed in the public domain. In addition, neither good data on the quality of fiscal expenditure, nor information on a direct impact of new adjustment measures, are typically available in most emerging markets, though some estimates could be available.

20. **Useful measures of implementation capacity could be derived from comparisons of aggregate fiscal targets and outcomes.** These measures are imperfect and have to be understood in the context of changes in a macroeconomic framework and fiscal policy plans. Still, they offer a measure of how a budget – a key instrument of fiscal policy – is able to achieve targets. Accordingly, budget implementation data were collected and assessed for LA-6 and CA countries for the 2008-13 period to allow comparisons of El Salvador with peers. While there are some differences in the data across countries (e.g., by level of government), these are consistent in terms of comparing targets and outcomes.

21. **El Salvador's fiscal deficit targets in recent years have been generally not been met, with deviations being greater than in most peers.** The slippages were observed both during the 2008-09 crisis, and during the more normal post-crisis 2010-13 period. The 2008-09 slippages may well be justifiable due to the needs of a countercyclical response, as exemplified by the similar deficit misses of several other countries, particularly among LA-6. However, they are less justifiable during the more normal 2010-13 period, when in fact LA-6 countries improved in this respect, leaving El Salvador, together with Honduras and the Dominican Republic, among the countries with the largest slippages.

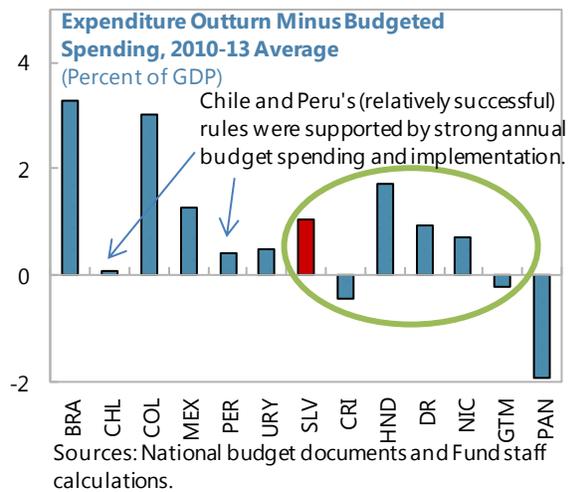
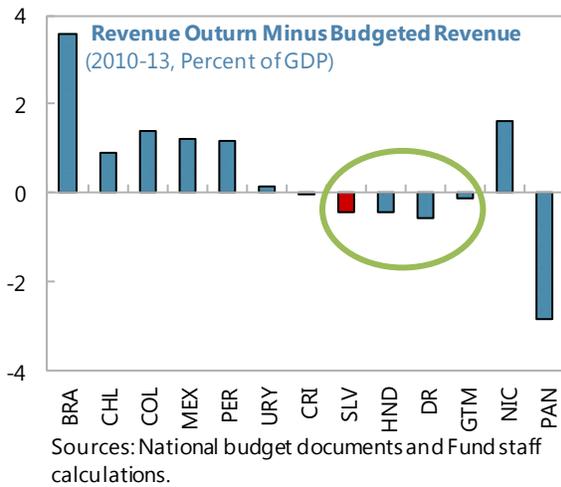


Sources: National budget documents and Fund staff calculations.

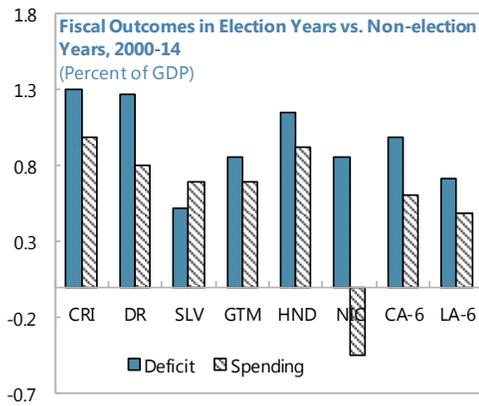


Sources: National budget documents and Fund staff calculations.

22. **A further analysis points to El Salvador's budget execution problems being both on the revenue and spending side.** During the post-crisis period El Salvador saw both revenue shortfalls and expenditure slippages. This pattern was shared by some of the CA peers such as Honduras and the Dominican Republic, but countries such as Guatemala and Costa Rica tended to have better performance in meeting budget limits, especially in terms of expenditure execution. By contrast, larger LA countries avoided revenue shortfalls during the period (which may reflect the quality of projections and the fact that revenue performance benefited from continuing commodity super-cycle through 2013). At the same time, with the exception of Chile (and to a lesser extent Peru and Uruguay), these countries saw significant spending execution overruns, which may have partly reflected pro-cyclical fiscal rules.



23. **Budget execution may also be affected by “political pro-cyclicality.”** Comparing fiscal performance during 2000-14 in electoral versus non-electoral years suggests that in the former both deficits and spending tended to be higher as a percent of GDP than in other years. This problem affects all LA-6 and CA-6 countries, and El Salvador in particular. Quantitatively, the extent of the problem is slightly smaller in LA-6 countries.



24. **An econometric panel data analysis of the budget execution data for 2008-13 indicates that Central American countries have larger implementation gap problems than their LA-6 peers.** In particular, spending overruns – controlling for revenue overperformance – appear to be influenced by electoral timing in Central America, but this is less of an issue in LA-6 countries.

Table 2. Dependent Variable: Actual Revenue Minus Budgeted Revenue
(Percent of GDP, Regressions include time dummies, not reported)

	Central America		South America	
	(1)	(2)	(3)	(4)
Constant	1.37*** 2/	1.36***	1.53*	1.53*
Output growth forecast error 1/	0.30***	0.30***	0.03	0.03
Election year dummy		0.60***		-0.08
R-sq	0.56	0.59	0.23	0.23

1/ Defined as actual output minus forecasted output growth, percentage point.
2/ Significance assessed with robust standard errors at 10, 5, and 1% levels respectively

One potential explanation is that the existence of fiscal rules in the latter (which generally constrained budget balances) limited spending overruns to revenue overperformance, including in election years. By contrast, CA countries may have had more leeway to finance extra spending, notably in electoral years, by borrowing. Also, the econometric analysis indicates that the revenue outcomes relative to projections in Central America were significantly

influenced by both output forecast errors and election timing. Neither link appears to be significant in LA-6 countries, though this may reflect a combination of reasons.¹³

25. **Overall, the analysis highlights a need for significantly improving El Salvador's fiscal implementation capacity.** In terms of deviations of outcomes from targets, El Salvador seems to be lagging not only LA-6 countries but also some of its Central American peers. Fixing any underlying problems would enhance the credibility of fiscal policies and is a **key pre-requisite to adopting a successful rule-based framework.**

Table 3. Dependent Variable: Actual Spending Minus Budgeted Spending				
(Percent of GDP, Regressions include time dummies, not reported)				
	Central America		South America	
	(1)	(2)	(3)	(4)
Constant	0.33	0.42	1.03***	1.03***
Revenue overperformance 1/	0.38**	0.24	0.39***	0.39***
Election year dummy		1.50***		0.43
R-sq	0.15	0.36	0.30	0.31

1/ Defined as actual revenue minus forecasted revenue, in percentage points of GDP.
2/ Significance assessed with robust standard errors at 10%, 5%, and 1% levels respectively.

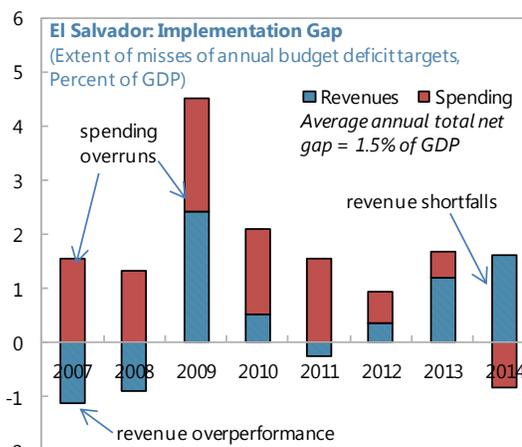
El Salvador's Budget Implementation Gap

26. **Yearly budget execution data for El Salvador indicate that the deviations from targets have been a persistent problem in recent years.** The slippage in the deficit outcome was broadly similar during the post-crisis period (generally higher than 1 percent of GDP), although its composition varied between revenue shortfalls and expenditure overruns. More recently, since 2013, the role of spending overruns has been declining. This partly reflected difficulties with financing, and partly greater effort at expenditure restraint. The problem of revenue shortfalls has been however more acute since 2013 as the impact from the relatively successful revenue-raising reforms that had been implemented in 2009-11 has tapered off.

¹³ For example, a weaker link between output and revenue forecasts in LA-6 countries may reflect their greater dependence on the commodity super-cycle, rather than differences in the output forecasting process.

27. There are several underlying reasons for the deviation of budget outcomes from plans.

On the revenue side, the main reason seems to be optimistic planning, as the budget's economic growth and revenue projections generally have a bias relative to outturns. This appears to have roots in the official forecasting process: while the technical work of the central bank is a key input into the growth forecasts, there is no process that assures that they remain independent. In particular, several times the forecasts were changed in an ad-hoc way, reflecting decisions of the broader government, just prior to the publication of the budget proposal. On the expenditure side, the key reason is spending bias: expenditure is highly rigid downward (around 80 percent is considered mandatory in some way), while upward in-year revisions may routinely be made if new financing becomes available in the course of the year. While spending execution improved in recent years (since 2012), it remains to be seen whether this reflected better spending procedures or lack of financing.

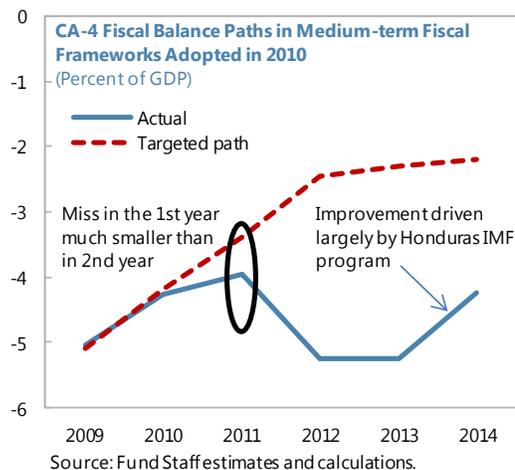


Source: Fund staff estimates.

El Salvador's Broader Fiscal Framework Gaps

28. Beyond the budget implementation gap El Salvador has several other significant problems with the fiscal framework:

- Incomplete coverage of fiscal accounts.** Budget laws exclude tax refunds and several financing items (e.g., short-term debt, as well as long-term debt that may be expected to be disbursed during the budget period but has not yet received parliamentary approval). In addition, the debt of municipalities and some public enterprises is not included in the measured nonfinancial public sector debt. These gaps create loopholes, including: (i) a situation whereby the deficits of the nonfinancial public sector could be larger than those that result from the budget process and (ii) a stock-flow discrepancy between NPFS debt and deficits.¹⁴ The incomplete coverage and approval of financing creates periodic costly financing strains.



Source: Fund Staff estimates and calculations.

¹⁴ There may be several underlying reasons for the stock-flow discrepancy, but one key such is less-than-complete coverage of quasi-fiscal operations at the time when deficits are measured, while their liabilities are ultimately taken over by the budget. The accounting standards used by the municipalities and public enterprises have yet to be improved in line with best practices, and some reforms are underway.

- **Lack of effective medium-term orientation.** As in other CA countries, deviations from previous medium-term plans are not addressed in a systematic way. This is evident from comparing the past outcomes of medium-term fiscal framework (MTFF) documents in El Salvador and other CA countries. The cumulative deviation from the medium-term plans represents a combination of the annual budget implementation deviations, gaps in coverage, and lack of corrective action in subsequent budgets.
- **Insufficient cash and debt management.** The authorities' cash management policy and practices remain fragmented. The treasury single account (TSA) is being gradually implemented on a pilot basis, but fuller implementation is to be expected only in the next few years. Correspondingly, the debt management remains to be modernized.

29. **The authorities have been working to address these gaps with the help of technical assistance from donors.** Substantial progress has been made with the adoption of the new MTFF, which includes an extensive analysis of fiscal risks. Gradual progress is being made on the medium term expenditure framework, the TSA, preparation of program budgeting, and modernizing key institutions, including customs and tax administration. This progress has to be accelerated as a precondition or in parallel with the process of implementing the fiscal rules.

D. Draft Fiscal Responsibility Law Proposals

30. **The draft FRL prepared by the Ministry of Finance – as well as other drafts prepared across the political spectrum (see Box 2) – introduce a number of desirable features that seek to address many of the fiscal framework gaps.** In particular, the MoF draft:

- Envisions a **medium-term, numerical dimension to fiscal policies and targets**, with a commitment to undertake a multi-year adjustment effort (during a “period of stabilization” of 4 years) and protect the gains in the ensuing 6 years by achieving certain quantitative outcomes. During this latter horizon, the specific debt ratio, primary balance, and revenue and spending targets would be reached or maintained. It is however unclear to what extent those targets would effectively be binding in that they are referred to as “indicative.” Provided the targets are achieved, they would prevent the drift of the public debt ratio toward unsustainable levels. The envisioned transition period that underpins prior adjustment before more permanent rules kick in is a good practice would contribute to a better implementation of fiscal rules.
- Contains **improvements to budget procedures (see Box 2)**. These would (i) facilitate proper planning and cash flow management (budgeting for tax refunds and reducing the limit on short-term debt); (ii) enhance the transparency and comprehensive reporting of budget information (including publication requirements), thereby helping reduce coverage gaps; (iii) improve discussion and evaluation of ex-post results (a more extensive integration with MTFF); (iv) seek to maintain balance between adjustment and countercyclical policies (saving part of the revenue overperformance and partial adjustment should revenues fall short of targets), (v) increase focus on social protection, including using poverty and efficiency indicators to make better use of resources in this area. Overall, these procedural enhancements should usefully strengthen El

Salvador's fiscal institutions, accountability, and quality of fiscal policies across a number of dimensions.

Box. 2. Summary of El Salvador FRL Proposals

Ministry of Finance (May 2014, revised in April 2016): includes *10-year horizon*, with adjustment in the first several years; and supported by *numerical rules*: (i) cap on non-pension public debt of 42 percent of GDP; (ii) non-pension primary balance targets for a 10-year horizon, while ensuring that the primary deficit is maintained at positive levels throughout; (iii) floor on tax-GDP ratio (17 percent) (iv) ceiling on the current spending ratio (19% of GDP) with sub-limits on the wage bill (9 percent of GDP) and goods and services (3½ percent of GDP); (v) reduction of the deficit systematically over time; *supporting procedures*: (i) integrating budget policies with the medium-term fiscal framework, (ii) limiting public spending in electoral years; (iii) explicit budgeting for tax refunds; (iv) increasing transparency through enhanced publication requirements; (v) limiting short-term financing (cap at 20 percent of current revenues instead of 30 percent currently); (vi) saving part of revenue over-performance; (vii) prohibiting financing of current spending from temporary revenue; and (viii) introducing escape clauses from numerical targets due to natural, economic, or security emergencies.

Parliamentary draft (April 2015): it was passed by the Finance committee but not the full parliament: includes a 5-year horizon and a debt ratio target without pensions of 49% of GDP. It contains some of the procedures from the MoF draft, but not all of them.

ARENA (2012) (main right wing opposition party) – it envisions, among other things, a positive primary balance, fiscal deficit below 1.5% of GDP, public debt below 30% of GDP in 15 years.

Concertación Nacional (2012) (a centrist party) – amongst other, it proposes to create a fiscal council to independently assess MoF macro projections; and after 4 years a fiscal rule based on the structural balance to be introduced.

FMLN (governing party) (2014) – in addition to some of the elements of the MoF's proposal, it emphasizes "private" responsibility; targets higher tax burden (20% of GDP), floor on public investment of 3% of GDP; commitment to reduce VAT evasion from around 28% to 18% in 2023.

E. Possible Enhancements to the Current Proposals

Key Considerations for the Current Draft

31. **Despite the many improvements suggested in the above proposals a number of further steps could be considered.** To be sure, the key to the workability of various rules and procedures would be political acceptance, both by the authorities and the broader society. In this regard, this section assumes that the main pillars of the authorities' current (MoF) proposal – a 10-year horizon coordinated with the MTFF, targets that are centered on public debt and deficits, and adjustment during the transition period that would be split roughly evenly between revenues and spending – would be preserved. In addition, the authorities could consider to:

- **Enhance coverage of the FRL by including pensions (and some quasi-fiscal activities currently outside the framework).** Excluding pension accounts from the framework and deficit and debt targets would represent a serious gap in coverage. This is all the more relevant because the recently-proposed pension reform would have substantial fiscal implications. Also, the coverage of municipalities and some extra-budgetary funds could be enhanced.
- **Clarify the hierarchy of fiscal rules.** A simultaneous targeting of deficits, public debt, and revenue and expenditure ratios (with subcomponents of spending) would likely over-identify the system. It would be desirable to single out the main rule (the best practice is, as per two-tiered structure, is to focus on the debt objective and subordinate an operational rule to this objective in a clear and binding way). It would also be desirable for the main rules to be explicitly binding.
- **Envision sufficient adjustment during the transition period.** In staff's calculation, the cumulative adjustment of 2 percent of GDP proposed in the draft FRL (MoF 2016 version) would not suffice to reduce the debt ratio from the current levels that are considered overly high for El Salvador. Instead, adjustment of at least 3 percent of GDP would be needed to bend the curve on the debt to ensure a credible reduction in the public debt.
- **Reduce elements of discretion in budget procedures and escape clauses.** Some of the budget implementation rules, as well as escape clauses, are not tightly defined. In line with best practices it would be desirable to define thresholds beyond which unfavorable economic circumstances would be considered exceptional (e.g., a recession, etc.) and for how long. Similarly, in the case of a revenue shortfall, the FRL provides ample discretion regarding whether the government would borrow or offset it with (spending) measures. This discretion could be reduced. It would also be useful to define ex-ante how probable contingencies (e.g., revision of national income accounts) would affect the operation of the rules.
- **Strengthen assurances of budget financing upon adoption.** The FRL does not propose to materially change the current situation whereby the budget, once enacted, would not have the necessary financing. Paradoxically, securing financing would require a much stronger majority in parliament (56 votes) than the budget itself (43 votes). Improvements in the presentation of the budget should permit approval of the financing in tandem with the budget process, thereby avoiding the costly brinkmanship and risky financing strains that were periodically observed in the past few years.
- **Consider giving more room to the operation of automatic stabilizers.** Other things equal, it is desirable to strengthen countercyclical elements in the fiscal framework. This would argue for using a greater share of revenue overperformance (than the current 50 percent) for deficit reduction. Other things equal, it would be possible to (symmetrically) increase scope for borrowing (as opposed to adjustment) as a response to revenue shortfalls.

Other Considerations to Improve Procedures

32. **The following procedural steps could be considered for strengthening El Salvador’s fiscal framework further:** these do not directly arise as comments on the draft FRL proposal, but represent additional elements that could be compatible with this proposal, but could also support other rules.

- **Introducing a pay-as-you go rule for new in-year spending initiatives.** Such a rule would envision that the impact of new initiatives on the budget deficit would be assessed over, say, a 3-year horizon, and the offsetting measures to neutralize the impact of the initiatives on the deficit be proposed as part of the package. Several practical steps are needed for effectively implementing this rule.¹⁵ Such a rule could considerably reduce the discrepancy between fiscal plans and outcomes in the course of a budget year. It could also discourage irresponsible fiscal decisions that may have a small short-term impact but large permanent impact on fiscal accounts (such as changes to the pension system).
- **Making forecasting and analysis more independent.** Some of the key economic and fiscal forecasts could be “outsourced” to independent forecasters or think-tanks. Alternatively, one could create a special fiscal council that makes an input into projections and objectively discusses outturns. Another alternative would be to give operational independence to the relevant technical staff of the central bank and the Ministry of Finance, but it may be difficult to ensure de-facto independence. The greater independence should improve the forecasting process and reduce discrepancies between fiscal plans and outcomes.
- **Reducing the share of rigid spending significantly below the current rate of around 80 percent.** This could be done by modifying some of the laws and decrees that protect certain (unproductive) current spending, for example on the wage bill (e.g., escalafon) or subsidies (through greater means-testing of eligibility).
- **Improving intergovernmental fiscal framework.** This would involve setting additional rules, incentives, sanctions, and reporting requirements for local governments. In El Salvador, this step should be carefully calibrated given the autonomy enjoyed by local governments and given the growing importance of the debt contracted by municipalities.

¹⁵ First, it would require building capacity for a competent and independent analysis of the key fiscal initiatives and the offsetting measures. (For practical purposes, a de-minimis threshold could be set to focus the scarce capacity and expertise on relatively large (macro-relevant) initiatives, while smaller initiatives would undergo a simpler procedure). Second, there should be an effectively enforced condition that—without a properly certified analysis of the full package (including offsetting measures), which demonstrate that it would be deficit-neutral—new initiatives cannot be submitted to the government or parliament for consideration. Third, the requirement for the three-year horizon for assessing the effects of a package should be strictly enforced. In this context, changes to the pension system may require a longer-term assessment horizon (say, 10 years or longer).

F. Options for Alternative Fiscal Rules

33. **While the authorities' proposed rule-based framework has a number of positive features that one can further build on, there may be alternatives.** Currently, the draft FRL targets a particular primary deficit path over 2015-25 that would be consistent with achieving the debt objective of 42 percent of GDP. However, the framework contemplated by the authorities entails a substantial risk of deviations, given that any adjustment (and economy's response to it), is usually very difficult to anticipate precisely. Also, El Salvador is an economy susceptible to shocks, including of "exogenous" nature such as natural disasters. El Salvador's difficult, polarizing politics could also be a source of shocks. The example of Panama's fiscal rules described above illustrates the risks involved in relying on precision in the adjustment path. And while the main FRL draft (the MoF version) allows for the possibility of deviations, it gives ample discretion to the authorities on whether and how to revert to the rule. It remains to be tested how this discretion would be used while preserving the elements of the rule-based framework.

34. **A simple alternative could be to wait with the formal fiscal rules until the "adjustment period" progresses.** This approach would allow policymakers to better gauge the economy and shocks and build institutional preconditions essential for fiscal rules. It will also help preserve flexibility of the policy response needed in a fully-dollarized economy that is lacking in other policy instruments. However, this approach would work well only if the envisioned adjustment in the transition period is (broadly) achieved. If not, there would be a substantial loss of credibility due to repeated delays in showing that the strategy is workable. Robust alternative approaches that can pave the way for a rule-based framework would therefore be useful.

35. **A workable rule-based fiscal framework for El Salvador would need to strike a balance between, at least, five features.** First, the framework should be prepared to handle frequent shocks, nonetheless indicating a clear path going forward. Second, the framework should give continuous operational guidance, and if needed pre-specified corrective course of action with a clear link to a debt sustainability objective. Third, given the political polarization between center-right and center-left parties in El Salvador, the framework should be broadly neutral with respect to the composition of revenue and expenditure-based fiscal effort. Fourth, to the extent possible, the framework should possess countercyclical properties. Fifth, the framework should rely on existing institutions and be compatible with their further improvement.

36. **A fiscal framework centered on an "error correction" nominal deficit objective offers an attractive trade-off among the above goals.** In a nutshell, such an error correction rule would involve setting a desirable medium-term fiscal deficit objective that moves an economy in a right direction in a steady way, by overcoming a certain proportion of the medium-term gap in a given year. Among other things, adoption of an error correction rule would obviate the need for separate "transition" and "permanent" rules.

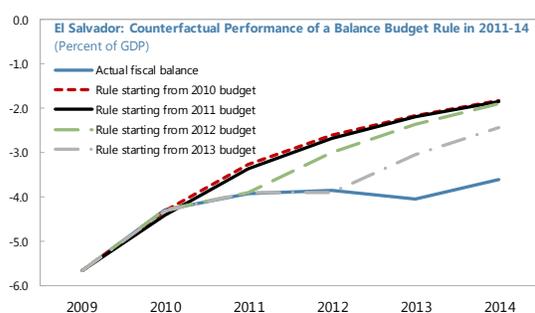
37. **A specific error-correction BBR was calibrated for El Salvador.** It follows the following equation for the overall deficit of the nonfinancial public sector:

$$FD(t) = FD(t-1) - \alpha[FD(t-1) - FD^*] - \beta[g(t) - g^*(t)],$$

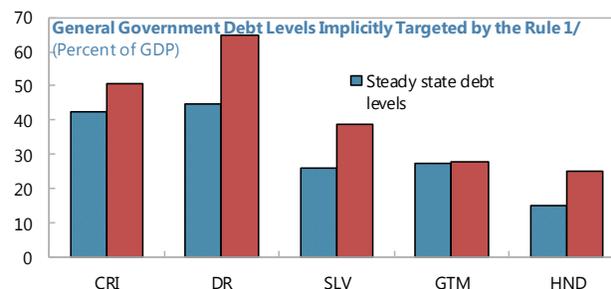
where FD is the deficit-GDP ratio, $FD^*=1$ is the medium-term deficit target, g is the real GDP growth rate, $g^*=2.0$ is the assumed medium-term GDP growth rate; $\alpha=0.30$ and $\beta=0.20$ are parameters that capture how responsive the deficit would be to deviations from the target deficit and GDP fluctuations around average growth, respectively. The rule would be updated annually to be synchronized with the budget process. The parameters were calibrated for El Salvador in light of the estimated potential growth rate (2 percent) and its revenue GDP ratio (around 20 percent).

38. **The error correction rule has the following advantages for El Salvador.**

- **Counterfactual simulations suggest it is relatively robust to (occasional) deviations.** In particular, in the post-crisis period the rule would have continuously indicated a steady policy effort in the “right” direction in the aftermath of slippages or shocks. The rule, however, hinges on that on average there are no slippages in the targeted fiscal effort.



Source: Fund Staff estimates and calculations.
The rule is made in year $t-1$ for the budget in year t , $FD_t = FD_{t-1} - \beta [FD_{t-1} - FD^*] - \alpha [g_t - g^*]$, where FD is fiscal deficit, FD^* medium-term deficit target, g is growth, and g^* potential growth. The rule ensures medium-term orientation and implied a gradual, sustained deficit reduction post-crisis. Parameters ($FD^* = 1\%$ of GDP, $g^* = 2\%$) are calibrated to El Salvador's circumstances so as to robustly achieve the public debt ratio not higher than 40 percent of GDP, which is considered sustainable for El Salvador (see the DSA). The rule envisions additional correction mechanisms to comply with the debt anchor.



Source: Fund staff estimates and calculations.

1/ Computed using $(debt/GDP)^* = (FD/GDP)^* \times (1 + g^*) / g^*$ where asterisk denotes steady state levels with and without historical stock-flow discrepancy observed during 2001-14, which is added to $(FD/GDP)^*$. For El Salvador, see details for rule calibration in the left chart. $(FD/GDP)^*$ for all countries is assumed to equal medium-term deficit objectives contained in the respective authorities' medium-term fiscal programs.

- **It can be calibrated consistently with pursuing a reasonable and prudent debt target (in a steady state) – for El Salvador and also other CA countries.** For El Salvador's parameters, a medium-term deficit target of 1 percent of GDP would be consistent with the steady state debt ratio of around 27 percent of GDP. Additionally, one would have to account for an average stock-flow discrepancy of about $\frac{1}{2}$ percent of GDP observed since the year 2000 – this would make the medium-term deficit target of 1 percent of GDP consistent with the debt ratio of 40 percent of GDP, which has been assessed as the sustainability limit for El Salvador (see IMF 2015d).
- **Focus on the budget balance ensures neutrality of the rule with respect to the revenue and expenditure-based measures.**

- **It would have two countercyclical features.** The formula allows for higher deficits in years of expected cyclical weakness (when potential growth is higher than the projected GDP growth) and vice versa. In addition, the mechanism of the rule's implementation could be made more countercyclical via pinning down a binding expenditure limit in the annual budget process, by allowing the operation of automatic stabilizers on the revenue side.
- **The rule's success would critically hinge on the progress of fiscal institutions.** For example, unbiased estimates and forecasts would be important for properly unlocking the rule's countercyclical and corrective properties.

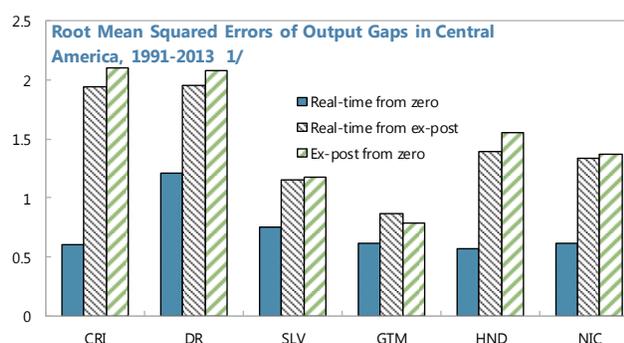
39. **A number of further decisions would be needed to make the rule operational.** For example, there is the question whether the specific parameters in the equation would be made fixed or could be gradually adjusted as the economy (e.g., potential growth, fiscal targets, etc.) evolves. In the latter case, it would be preferable that such adjustments in the parameters be insulated from the political process and rather be in the purview of technocratic bodies (fiscal councils). Another decision would be whether to allow deficit correction in response to unexpected cyclical developments. It would also be important to provide for reasonably tight exceptions and escape clauses. (Given the flexibility of the rule, the need for such escape clauses would diminish but would not be eliminated).

40. **The rule would be compatible with a limited number of sub-rules, particularly on the expenditure side.** For example, a sub-ceiling on relatively unproductive expenditures (e.g., the wage bill) could be a useful complement. Overall, it would be desirable not to have too many sub-rules, as rigidities in expenditures could also hamper their efficiency, and the sub-rules could well interfere with the operation of the main rule.

41. **The error correction rule would also have some disadvantages.** First, the rule does not ensure a full (backward-looking) correction of the debt ratio on a path that is implicitly targeted.

Second, the cyclical adjustment is not theoretically perfect at it adjusts the deficit with respect to the output gap "growth" and not the output gap level. But these technical issues do not seem to be overwhelming in practice: should a fuller correction be essential there are options to adjust the formula. Also, the measurement of the output gap level has been problematic. In Central America, according to staff estimates, the information on output gap has been so far not materially different from a simple assumption of a "zero real time output gap."

The more serious problems of the deficit error correction rule are nontechnical and involve rather weak implementation incentives due to the relatively complex nature of the rule and hence a relatively low "headline effect."



Sources: Fund staff calculations and IMF WEO database.

1/ The chart shows that using real time information on output gaps provides very modest information relative to a "zero-output-gap" assumption in Central America, assuming ex-post information as a benchmark. In particular, the difference between green and black striped bars is small or even negative, indicating that using the zero-output-gap assumption would have yielded roughly the same error as using available real time output gap estimates.

42. **An expenditure rule could also be a technically sound option for El Salvador, including in combination with other rules.** Its advantages include: (i) clear operational guidance translated into the budget spending limits; and (ii) built-in counter-cyclicalities due to full operation of automatic stabilizers on the revenue side. The rule however has certain disadvantages: due to the weaker link to debt sustainability and an implicit bias away from revenue-based fiscal measures. In practice, a combination of rules is often used to get the desired balance of these objectives, and an expenditure rule would be an important ingredient to such a combination. The key question about the expenditure-based rule would be its acceptance within the Salvadoran political spectrum and the broader society given the high political polarization around the issue.

43. **Ultimately, the effectiveness of fiscal rules hinges on political and societal will to implement them.** Well-designed fiscal rules would be useful both on a formal and informal basis, helping upgrade the quality of fiscal policymaking while leveraging improvements to build political commitment for sound policies. The key challenges would involve addressing the institutional pre-conditions prior to – and in parallel with – the adoption of the rules and building effective communication to achieve and sustain their broad-based support.

References

- IMF (2009) Kumar, M., E. Baldacci, A. Schaechter, A., C. Caceres, D. Kim, X. Debrun, J. Escolano, J. Jonas, P. Karam, I. Yakadina, and R. Zyttek (2009), [Fiscal Rules—Anchoring Expectations for Sustainable Public Finances](#), IMF Staff Paper, (Washington: International Monetary Fund).
- IMF (2012) Andrea Schaechter, Tidiane Kinda, Nina Budina, and Anke Weber “Fiscal Rules in Response to the Crisis—Toward the “Next-Generation” Rules. A New Dataset,” WP/12/187.
- IMF (2014), Elva Bova, Nathalie Carcenac, and Martine Guerguil “Fiscal Rules and the Procyclicality of Fiscal Policy in the Developing World” WP/14/122.
- IMF (2015a), Till Cordes, Tidiane Kinda, Priscilla Muthoora, and Anke Weber, “Expenditure Rules: Effective Tools for Sound Fiscal Policy?” WP/15/29.
- IMF (2015b) “Fiscal Policy in Latin America: Lessons and Legacies of the Global Crisis,” SDN 15/06.
- IMF (2015c) “Reforming Fiscal Governance in the EU,” SDN 15/09.
- IMF (2015d) “El Salvador: Staff Report for the Article IV Consultation,” IMF country Report 15/13.
- Klemm A. (2014) “Fiscal Policy in Latin America over the Cycle,” IMF Working Paper 14/59.
- World Bank (2015) “*El Salvador - Systematic country diagnostic : building on strengths for a new generation.*” authored by Calvo-Gonzalez, Oscar and Lopez, J. Humberto, Washington, D.C. : World Bank Group. <http://documents.worldbank.org/curated/en/2015/06/24706162/el-salvador-systematic-country-diagnostic-building-strengths-new-generation>.

THE SALVADORAN PENSION SYSTEM: IN SEARCH OF SUSTAINABILITY¹

El Salvador's pension system has been marked by continual imbalances and insufficient action to address them. The move to a defined contributions system from the late-1990s proved no panacea as transition costs surged while coverage stayed low. The recently-submitted proposal for a mixed system would return most of the private segment to a public PAYG pillar, helping fiscal cash flow and reducing measured public debt and deficits (for purely accounting reasons). But the draft eschews parametric reforms and thus would not improve the system's sustainability, while introducing new risks. A viable reform strategy should include: (i) deep parametric reforms and (ii) a credible commitment to "fiscalize" remaining pension benefits via creating adequate fiscal space in non-pension accounts.

A. Background

1. **El Salvador's pension system emerged gradually as a heavily subsidized and narrow PAYG scheme** (Lazo et al. (2010)). For a long time, the pension contribution rate was only 3.5 percent in the private sector (of which the government paid 0.5 percentage point) and 5–12 percent in the public sector (depending on sub-sector and period). Just 15 years of contributions were sufficient for a pension, while average replacement rates ranged from 80 to 100 percent.² As a result, in the private sector contributions of only 6 months' worth of wages were sufficient to earn a right to a life-time pension, with expected post-pension life span of around a quarter-century, implying severe actuarial imbalances and large implicit subsidies. A study carried out in 1994 estimated that without reforms the public system would have run deficits from 1997 and that its reserves would have been depleted by 2009. At the same time, the system was estimated to have covered less than a quarter of the economically active population.

2. **In the late 1990s, El Salvador embarked on a transition to the defined contributions (DC) system.** The PAYG system was to be phased out with a law enacted in 1996 (effective from 1998), which obliged older population (women over 50 and men over 55 as of 1998) to stay in the PAYG system, while the young (under the age of 36 in 1998) were mandated to switch to a new system based on individual accounts. The remaining individuals were given an option to choose between the PAYG benefits (linked to a wage earned over the last 10 years prior to retirement) and

¹ Prepared by Bogdan Lissovlik

² These replacement rates reflected higher average number of years of contributions than 15, but in any case replacement rates could not fall below 55 percent with the minimum requirements fulfilled.

the new system. In the event, some 90 percent opted to be in the new system.³ It was believed that the new system would help bolster formal labor force participation and hence coverage.

3. **The defined contributions segment that was introduced in 1998 has been managed by private pension funds.** Initially, five pension funds were set up, but eventually only two funds remained.⁴ The funds are tasked with allocating assets and awarding pension benefits, and have the flexibility to contract services (contributions collection, information processing, etc.) with the exception of direct management of the investment portfolio. Commissions represent the primary source of income, and maximum commissions were initially set at 3.5 percent of wages (over a quarter of the contributions flow), but these were cut several times and have been at 2.2 percent of wages since 2011. About one-half of the commission represents expenses on insurance policies to guarantee financing of disability and survivorship benefits. Supervision is conducted by the Pensions Superintendency.

4. **The 1996–98 reform had also adopted limited parametric adjustments to improve fiscal sustainability.** The contribution rate was gradually increased to 13 percent for the private sector and 14 percent for the public sector. Required years of contributions were raised to 25 years. The qualifying period for a pension calculation in the PAYG segment was changed from the last 3 years of salary to 10 years. As a result, the replacement rate in the PAYG segment was reduced from 100 to 86 percent for public sector employees and from 80 to 78 percent in the private sector. Overall, the 1996–98 reform was estimated to have improved the long-term pension sustainability, roughly halving its unfunded liabilities. Still, the PAYG segment remained very generous by international standards, with the replacement rates being high, and with retirement ages and required contribution periods being low comparatively.

5. **The reform implied nontrivial fiscal “transition costs.”** Most of pension-related social contributions were re-directed away from public revenue to private individual accounts, while residual PAYG pension entitlements remained to be financed by the budget. This caused fiscal pension deficits of around 2 percent of GDP. Additional (initially fairly modest) transition cost obligations arose from the need to credit past contributions made within the PAYG system for those who opted to transfer to the new system, and a decision to guarantee a certain minimum pension to those who complied with the main qualifying requirements but whose balances in individual accounts were insufficient to generate a pension. Still, the transition costs, while not insignificant, initially appeared to be “bounded,” and were expected to fall over time, converging to zero by 2030 or so.

³ In late 1990s, there was optimism over capacity to generate financial returns in El Salvador and globally, but it proved unfounded. In addition, the individuals making a choice may have implicitly assumed that the government would move to limit their losses on the downside, an assumption that proved at least partly correct.

⁴ The quick reduction in the number of pension funds and lack of new players subsequently raised concerns about barriers to entry (see Acuña (2005)).

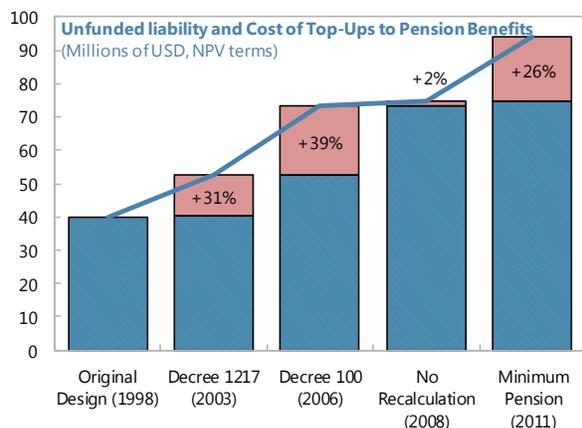
6. **The authorities opted to absorb the transition costs via reserve drawdown and borrowing rather than deficit-reducing measures.** The funding of PAYG deficits initially relied on tapping “technical reserves” from prior years. But these were fully drawn in 2001, well before expectations, while domestic budget funding options became more limited.⁵ In 2001-05, the key funding source was borrowing in international markets, with some \$1.2 billion estimated to have been issued for pension-related financing over 5 years. But this source was problematic due to its high interest cost (8–9% annually in mid-2000s). In 2006, it was decided to resort to private pension fund financing of public pensions. The pension funds had ample liquidity and appeared to be a stable source at a more acceptable cost. To secure this financing on favorable terms, the pension funds were *mandated* to purchase new government pension bonds (CIP bonds), at an interest rate (LIBOR plus 75 basis points) that initially seemed not far from market levels and was around 6 percent in 2006.⁶ The rate however was dragged down to 1–1½ percent by the 2008-09 global crisis, staying low through 2016.

7. **In the event, the transition costs quickly escalated, reflecting a vicious circle between falling returns and lack of policymakers’ resolve to adopt tangible measures.** With the returns on pension fund investments falling perceptibly in the first few years of operations,⁷ the authorities yielded to political pressure to equalize pension benefits of those who had opted for the DC system to those enjoyed by PAYG pensioners. This resulted in ad-hoc decisions (in 2003 and 2006) granting top-ups to various population cohorts at the expense of the budget. Additional steps, such as significant periodic increases in the guaranteed minimum pension, also increased the pension system’s future fiscal burden. In 2008-09, declines in the LIBOR and correspondingly the rates of return on pension bonds due to the global financial crisis added to these costs and extended them over time. Unlike the original transition costs, these new unfunded liabilities reflected not so much the generous defined benefits of the PAYG system, but longer-term costs from projected declines in replacement rates in the DC system raising the probability of recourse to the minimum pension guarantee in the future.

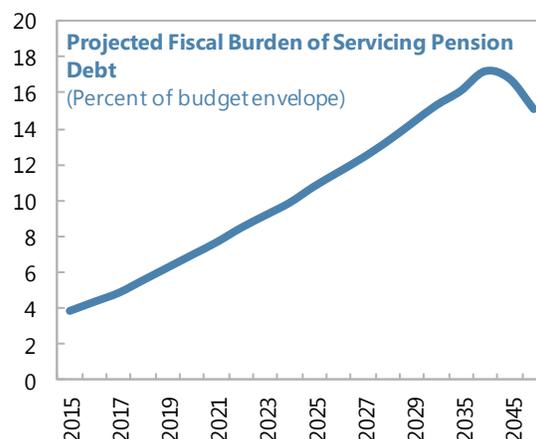
⁵ The full dollarization regime adopted in 2001 likely constrained the government’s funding options.

⁶ This rate was however somewhat below market related levels considering the pension bond’s 25-year maturity and graduated back-loaded principal repayment schedule.

⁷ Nominal returns were partly influenced by the adoption of the full dollarization regime in 2001, which helped to substantially reduce interest rates.



Source: Salvadoran authorities and Fund Staff estimates and projections.



Sources: Salvadoran authorities and Fund staff estimates and projections.

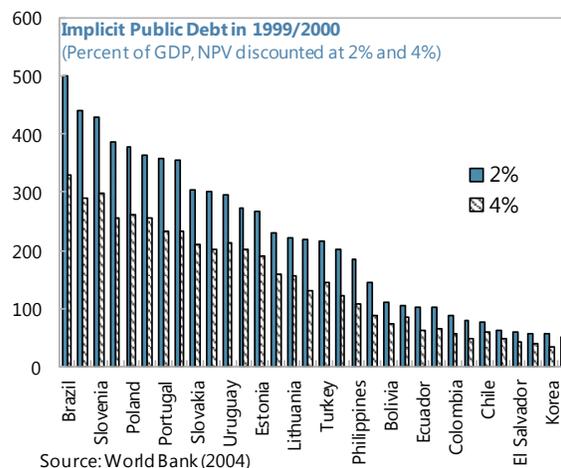
8. **The evolving system is now approaching several critical junctures.** First, at the urging of the Constitutional Court, in early 2016 parliament adopted a decision to substantially raise interest rates on pension bonds, which would increase the fiscal burden of pensions going forward. Second, the upper (45 percent) limit on mandatory purchases of key pension bonds (“CIP-A”) is expected to be reached in 2016. This limit was raised in the past, and the government had committed not to increase it further. Should it keep this commitment, it can no longer rely on captive financing from the pension funds. Third, it is estimated that, starting in 2016, total contributions would become smaller than the needed issuance of pension bonds. Thus, financing the transition costs “within the pension system” would be unrealistic even if the government chose to continue to rely on captive financing. Finally, the large younger cohort that was not entitled to a choice of the system and received no benefits from the top-ups to date would begin retiring in 2017. As their replacement rates are projected to drop relative to those of previous cohorts, there would be political pressures to top up their pensions, creating a major precedent if the line on the top-ups cannot be drawn.

B. Diagnostic of the Current (Pre-reform) Situation

9. **El Salvador’s pension system problems of fiscal, social, and actuarial sustainability require a thorough analysis.** A broad stock-taking of the pension system is warranted to go beyond specific pension system issues and also focus on linkages with El Salvador’s economic and institutional features: including the fiscal position, the social protection system, and the labor market. A cross-country perspective could additionally help measure the severity of any policy gaps and viability of options to address them, as many other countries are grappling with imbalances of a similar nature.

Fiscal Sustainability

10. **On the surface, El Salvador’s implicit public pension debt – a summary indicator of pension system’s impact on fiscal sustainability – does not look high in a cross-country comparison.** The budget obligations for defined benefit pensions and the projected triggering of the minimum pension guarantee are estimated at around 100 percent of GDP in NPV terms.⁸ This estimate is not straightforward to put in a cross-country perspective given the differences in horizons, discount rates, the nature of the systems, and other variables. The World Bank (2004) study that aimed to arrive at somewhat comparable estimates put those in the range from 30 to 500 percent of GDP, with El Salvador being at the low end at the time (some 50 percent of GDP at the 3% discount rate in 1999/2000), to be comparable to the 3% discount rate that El Salvador currently uses. Since then, El Salvador’s implicit debt has roughly doubled as a percent of GDP. While there is no comprehensive updated calculation, a comparison with EU countries, Colombia, and Mexico indicates that for El Salvador the assessed liability still remains at the low end of the cross-country range.⁹



11. **Upon closer scrutiny, however, the cross-country comparisons of implicit debt understate El Salvador’s fiscal sustainability challenges.** The indicator as commonly calculated (see World Bank (2004)) included only spending obligations, excluding a favorable impact from “earmarked revenues,” such as pension contributions. At the same time, the second pillar-based systems such as those of El Salvador are treated differently, in that they exclude spending obligations, presumably because they are automatically offset by matching revenues. This makes the above El Salvador’s NPV calculations biased downward compared with countries that have greater reliance on PAYG systems. The latter also generate significant revenue earmarked for pension spending (both from specific contributions and general taxation), but this revenue is not allowed to reduce unfunded spending obligations in any proportion.¹⁰ Thus, El Salvador’s actuarial calculations would not be comparable to those of countries with PAYG systems. And even compared to funded systems only, this measure for El Salvador would tend to yield, by construction, a lower unfunded

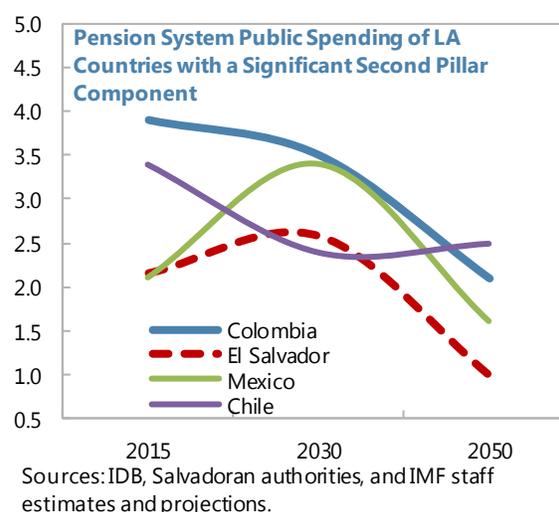
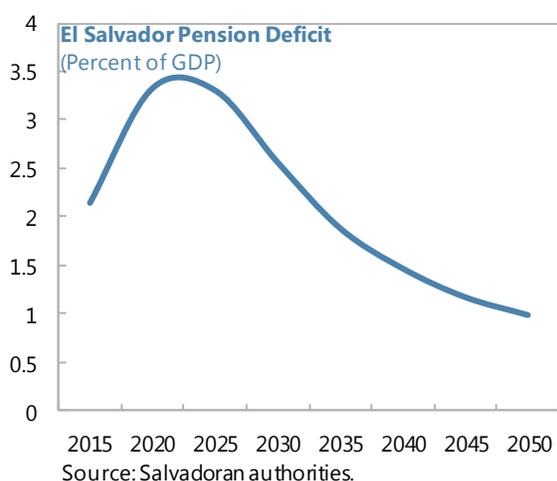
⁸ In El Salvador, only defined contributions pensions have clear funding sources, while other pension liabilities have to be financed in an ad-hoc way, and would ultimately require a fiscal effort (either to pay the benefits immediately or service the debt burden over time). The estimates given herein exclude additional liabilities for military pensions, which however would have a limited impact (about 0.1 percent of GDP annually).

⁹ El Salvador’s NPV of around 100 percent of GDP is below Colombia’s and Mexico’s recent figures of 130 percent of GDP. In Emerging Europe, Stiftung Marktwirtschaft (2015) estimated implicit debt in the range of 100 to 500 percent of GDP.

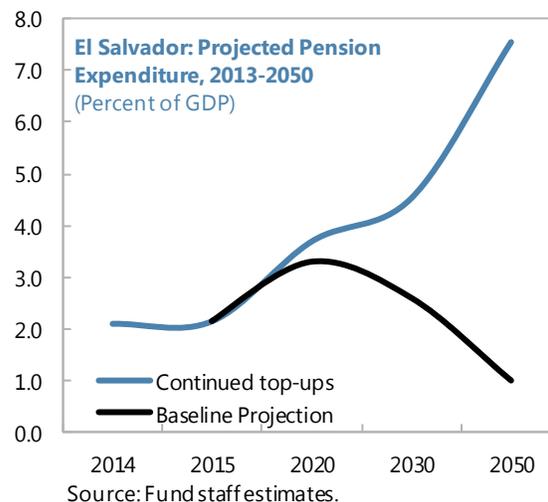
¹⁰ In any case, sustainability would depend on the overall fiscal position and not only the profile of pension spending.

liability, as most other such systems (e.g., Chile, Mexico, etc.) have more extensive PAYG elements than El Salvador.

12. **In line with implicit debt, the projected pension deficits do not seem to be large in the baseline, but this hinges on an unlikely assumption that the current rules under the defined contribution system could be fully maintained.** The baseline projection shows that those deficits (which essentially reflect public spending on transition costs) would peak at above 3 percent of GDP during 2020–25, and subside gradually over the next few decades. Such a path would again put El Salvador at the lower end among regional peers, including compared to similar pension systems, in terms of the level of the pension-related public spending. The somewhat lower deficits largely reflect the dominance of the self-financed defined-contributions pillar in El Salvador relative to other countries. But it is unlikely that the defined contribution system could be maintained in the current form given the political pressures to keep higher replacement rates and the cash flow problems that could emerge under unchanged rules. One question would be whether El Salvador could avoid further top-ups to pension benefits, which would mark a major break with the practice of the past decade or so.



13. **The impact of the likely slippages relative to the current rules could be large.** In a hypothetical scenario whereby full top-ups (the complete matching of defined benefits) would continue, public pension spending would be driven by demographic factors, and, other things equal, could exceed 7 percent of GDP by 2050. Additional costs could arise from the very low coverage (less than a quarter of the population), which may not be sustainable. Increasing the coverage rate would entail correspondingly larger public spending. To



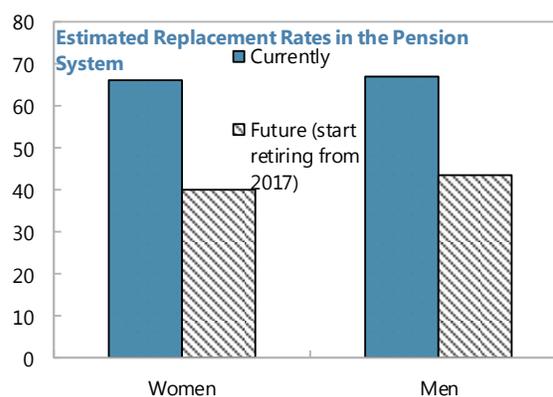
be sure, there could be various cost-effective ways of increasing coverage via means-tested expansion of benefits to the poor.

14. **Even assuming that El Salvador’s fiscal pressures from the pension system could be contained within the “baseline” projection, the liquidity pressures could raise more serious problems than those faced by most peer countries.** First, as a fully-dollarized economy El Salvador tends to have particularly stringent fiscal funding constraints and hence smaller room for maneuver. Second, in this context, the *incremental* pressure on funding costs in the next few years would be larger than the baseline deficit path would suggest. This is because the room for financing offered by private pension funds since 2006 has been largely exhausted. Assuming that the pension funds can no longer finance any public spending, the increased funding needs could amount to 3–3½ percent of GDP.

Social Sustainability

15. **Pension system sustainability assessment needs to go beyond its fiscal gap impact.** The full adoption of the defined contribution system would eventually (if only technically) “solve” the issue of fiscal sustainability over the long term, but the new pressure point would be the adequacy of pension benefits, including: (i) adequacy of pension levels; (ii) adequacy of coverage, and (iii) distributional adequacy. As explained below, all of these aspects raise serious sustainability concerns, though it is difficult to develop precise metrics for this assessment.

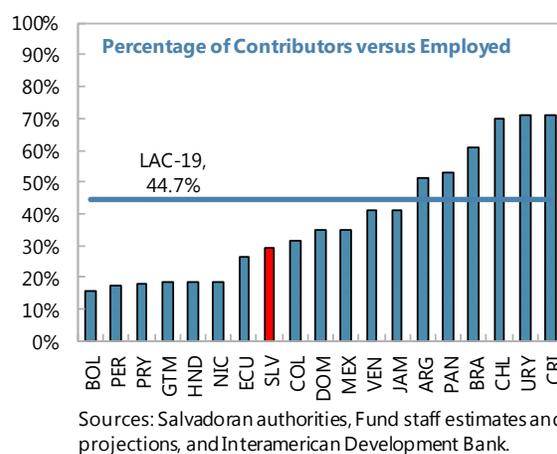
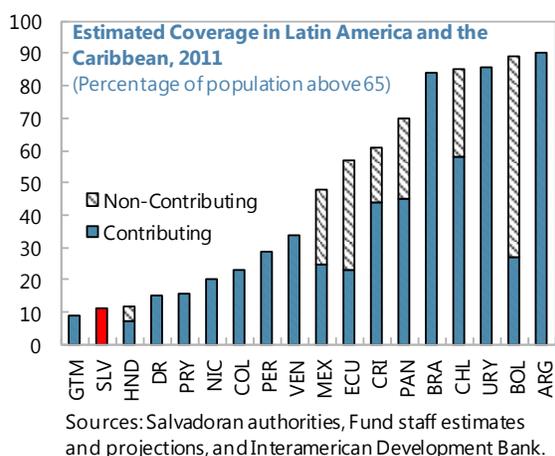
16. **Falling pension levels.** In the baseline scenario projection developed by the authorities, replacement rates are projected to roughly halve over the next generation—from almost 70 to around 40 percent on average. They would fall further for some categories of the population: for example, high-income female workers would see replacement rates of below 25 percent. In addition, should financial returns continue to remain close to the low levels of the past few years, the replacement rates would fall further for all categories of pensioners. A substantial proportion of future pensioners would see replacement rates in the range of 30–40 percent or below, making them among the lowest in Latin America. Apart from the low levels, the relatively rapid reduction in the replacement rates over time could also impact sustainability. Finally, about half of contributors will likely not earn a right to a pension but would instead receive a lump-sum benefit, which would be clearly insufficient to provide for an adequate pension.



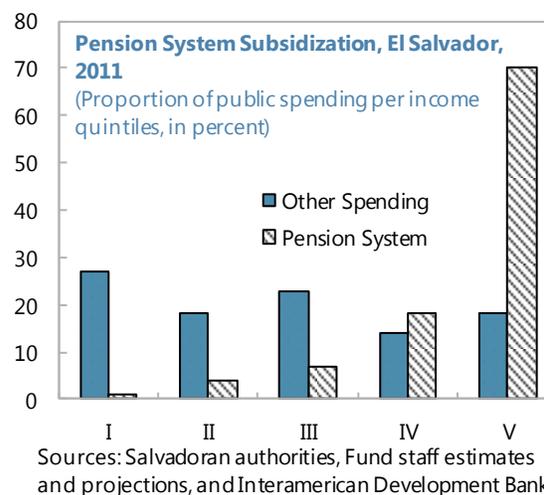
Sources: Salvadoran authorities and Fund staff estimates and projections.

17. **Low coverage.** Only 24 percent of workers in the labor force are paying pension contributions. At the same time, less than 11 percent of those over 65 years of age receive any pension benefits. Based on comparable numbers, these are some of the lowest rates of coverage in Latin America. The defined contributions segment has been supplemented with other pillars (see

Table 1 in the Appendix). The zero pillar was introduced in 2009, whereby a small noncontributory monthly pension of US\$50 (basic universal pension) was allocated for low-income individuals in the poorest municipalities. While the program can expand coverage in a desirable way and at a reasonable cost, its scale has so far been very small. The third, voluntary pillar remains negligible. Finally, based on the experience of other countries, expecting significant and rapid increases in coverage would be unrealistic, not least because incorporating the shadow economy into the formal sector is at best a long, drawn-out process requiring a major effort.



18. **High inequality.** The benefits disproportionately accrue to high-income pensioners in all key segments of the system. Thus, 5 percent of individuals receive 20 percent of pensions in the new defined contributions segment, while 20 percent of high-income individuals receive 50 percent of benefits in the PAYG segment that is being phased out. This inequality was a product of the pension system's initial design of overly generous benefits for the few. Since the system's participation was dominated by the relatively well-off parts of the population, the benefit generosity was de-facto regressive. This effect was reinforced by follow-up policy adjustments that were significantly aimed at protecting existing benefits. The shift to a defined contributions-based system did not correct any distributional disparities as it does not envisage re-distribution from the rich to the poor. In addition, poorer people are more likely to be among those that do not accumulate 25 years of contributions that are necessary to earn a pension.¹¹ The noncontributory (first) pillar would



¹¹ While those who cannot fulfill the years of contributions requirements would receive a lump-sum amount corresponding to their savings, this benefit would be clearly falling short from the social assistance perspective. Also, unlike those who earn a pension, the lump-sum beneficiaries would not enjoy a minimum pension guarantee, or free access to the public health care system.

mitigate those differences, but it remains extremely small in El Salvador. As a result, the distribution of pension system's implicit subsidies remains strikingly skewed to the richer segment of the population.

Actuarial Sustainability

19. **An integrated actuarial perspective is also important for gauging sustainability of a contribution-based system.** While a macro-actuarial analysis was already used in the assessment of unfunded fiscal liabilities, a micro-based actuarial evaluation may be essential to assess incentives and labor market issues. For example, micro-level distortions could affect substantially assumed macroeconomic scenarios. Micro-actuarial sustainability is key to boosting participation in the system, which is particularly important given the high share of informality in El Salvador. In this context, the following stylized facts stand out.

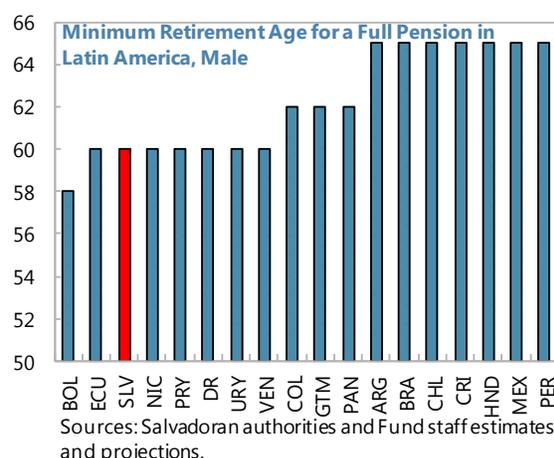
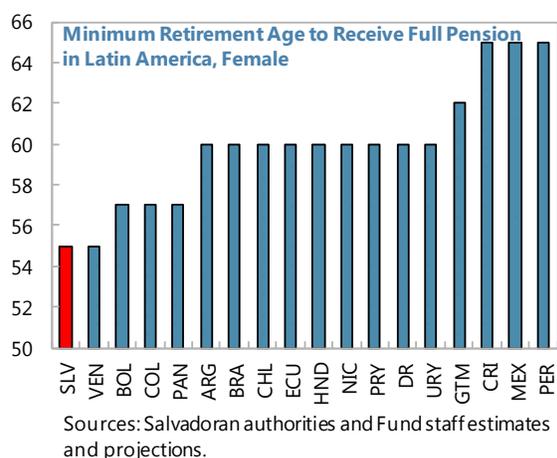
20. **Large disparity between contributions and benefits.** A statutory contribution rate of 13 percent would translate into an effective contribution rate of 10.8 percent (net of commissions). Assuming zero return on contributions, this rate would be sufficient to accumulate only 2.7 years' worth of salary payments.¹² However, conditional life expectancy at the time of retirement in El Salvador is on average 25 years.¹³ At the current (defined benefit) replacement rate of around 70 percent, there would be a large micro-actuarial imbalance, whereby the amount of expected contributions is about 6½ times lower than the expected benefits they would need to finance. Alternatively, under the same assumptions, a fully-balanced actuarial system (both at micro and macro levels) would imply, in a steady state, a replacement rate of only around 11 percent, which would most likely be unsustainable. The above back-of-the-envelope calculation would be broadly consistent with the fact that the total amount of pension contributions is currently approximately equal to total pension benefits, since the number of contributors is about 4-5 times the number of current beneficiaries.¹⁴ But this ratio is projected to worsen sharply over the next few decades with population aging, as the micro-actuarial imbalance could give rise to macro imbalances.

21. **Delays in parametric reforms are a key reason for the observed actuarial imbalances.** The veil of self-financing of the defined contributions system appears to have eased the urgency of parametric adjustments, as retirement ages, years of contribution, and contribution rates have persisted unaltered since 1998 at levels substantially below those of other countries in the region. Retirement ages have not been changed for a much longer period of time and – along with Venezuela and Bolivia – El Salvador has been one of the most visible outliers in this regard.

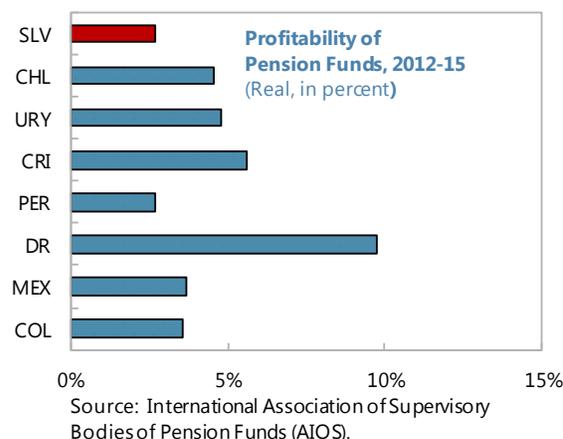
¹² The assumption of zero return on contributions may not seem realistic, but may not be far off in light of El Salvador's fully dollarized economy with low inflation and low growth, as well as the specific distortions that depress its financial returns (see below).

¹³ This is an average of 29 for women at age 55 and 21 for men at age 60.

¹⁴ The calculation is sensitive to inclusion or exclusion of various groups of beneficiaries (e.g., disability and survivor pensioners).

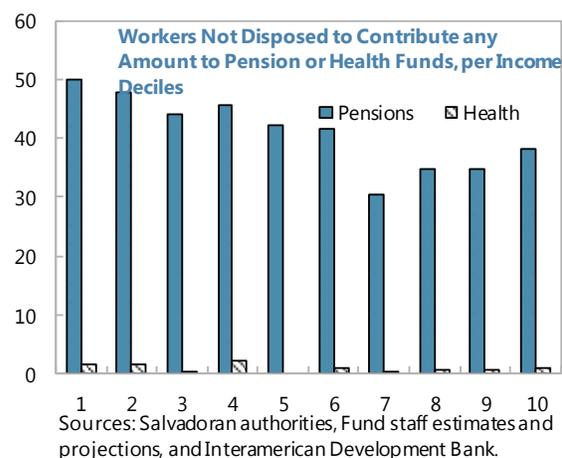


22. **Sub-par financial returns.** In principle, robust financial returns could help sustainability of a defined contributions pension system, other things equal. In the case of El Salvador, however, there are several factors that have hampered those returns. First, the low-yielding government CIP bonds (both "A" and "B" series, with the limit of 45 percent applying only to the "A" series) required to be purchased accounted for about 60 percent of the pension fund portfolios in late-2015, carrying an interest rate of around 1.3 percent at the time, compared to that of over 6 percent for the remainder of the portfolio.¹⁵ Second, aside from the mandatory purchases, there remain restrictions on asset allocations within pension fund portfolio, particularly limiting the amount that they could invest abroad. Third, and more broadly, the Salvadoran economy has been growing at a relatively slow pace over the past few decades, so it would be unrealistic to expect that very high rates of return could be sustained. As a result of the above reasons, the profitability of Salvadoran pension funds has been among the lowest in the region and trending down.



¹⁵ The different risk profile of assets would not explain the difference in returns, in part because a significant chunk of the remainder of the portfolio is composed of (high-yielding) Eurobonds, whose risk profile is not higher than that of the pension bonds.

23. **Weak incentives to contribute.** The low returns dent contributors' willingness to participate in the pension system. While contribution payments are mandatory for employers and employees (excluding the self-employed), tax and contribution evasion is high in El Salvador. In this regard, surveys show a considerable contributor preference to pay for health benefits as opposed to pension benefits. The unwillingness to honor pension contributions is broad-based, but is particularly high among the poorer workers. One reason for this could be that contributors may feel that the pension system would not offer adequate benefits in the future. In any case, this contributor preference is also visible in the data on actual collections, whereby health-related contributions have been reported to be somewhat higher than the pension contributions.



Overall (Sustainability) Assessment

24. **The current pension system is unsustainable overall, reflecting a complex—and partly offsetting—interaction between fiscal, social, and actuarial sustainability aspects.** In the baseline scenario (e.g., assuming the current defined contribution rules can be maintained indefinitely), fiscal sustainability is a short-to medium term problem, which gets “resolved” in the long term at the expense of social sustainability. However, the large size of basic actuarial imbalances indicates that, in the long term, it would be impossible to maintain *both* fiscal and social sustainability without parametric adjustments. In particular, either there would be a need for large *permanent* fiscal subsidies for pensions (which are not currently envisioned and anyway likely unaffordable due to El Salvador’s overall fiscal position) or replacement rates would have to drop to unsustainable levels for the system to be financially viable.¹⁶ Overall, there is little evidence that the pension system would be capable of fulfilling its core function: a reliable and efficient provision of decent retirement income to a significant part of the population.

25. **In addition to the fundamental actuarial disequilibria, institutional shortcomings in dealing with transition costs create an unfavorable dynamic and increase uncertainty.** First, it remains unclear how the transition costs could be ultimately resolved. For example, while the general budget has the legal obligation of servicing pension bonds, the incremental fiscal gap and its implications have not been internalized in the broader fiscal adjustment strategy. The authorities’ draft fiscal responsibility law and medium term fiscal framework documents treat pension and non-pension accounts separately, with the key non-pension indicators and targets set largely independently of the pension system developments and needs. Second, there is neither a framework

¹⁶ In this regard, the actuarial perspective indicates that a fall in average replacement rates could be yet deeper than the “baseline” scenario would indicate. This may reflect the role of some particular assumptions behind the baseline scenario that is modeled by the authorities, such as that of a “closed population” after 2045. As a result, the aging population pressures may be underestimated in the baseline.

for evaluation, nor a process that could impact future top-ups or other adjustments in the pension system due to fiscal sustainability concerns. Partly for this reason, these top-ups have proliferated and their cost has been snowballing. Third, the short-term solution to the fiscal cash flow problem, borrowing from pension funds at low rates to finance current pension payments in the publicly-managed system, has created a vicious (political economy) cycle. The borrowing depresses future pension benefits in a defined contribution system, in turn putting additional pressure on the government to prop up those benefits at the expense of the budget. The resulting adverse dynamics and uncertainty suggest that the system is not evolving in the right direction, underscoring the rationale for reform.

C. The “Mixed System” Proposal

Draft Amendments to Pension Law¹⁷

26. **In February 2016 the government submitted legislation to parliament** proposing to address pension system problems by halting the transition to a defined contributions model. Instead it suggested adopting a “mixed” system on a permanent basis. The main features would be the following:

- **Transfer of assets to the public sector.** Pension contributions on all (portions of) salaries that are below a threshold (2 minimum (non-agricultural) wages, over one-half of pension contributions flow) would be reallocated to the public sector. Assets corresponding to the past contributions below the same threshold would be moved to the public sector.
- **Flat public pension benefits.** Pensioners in the newly formed public pillar would earn a minimum “contributory” pension (currently \$207 per month, or 82 percent of the minimum wage, adjustable annually based on inflation and subject to availability of fiscal resources), regardless of the precise amount contributed as long as contributions are below the two minimum wages threshold. The reform would rescind a major top-up to pension benefits adopted in 2006.
- **Downsizing of the defined-contributions pillar.** Contributions above the same threshold (involving about 20 percent of contributors) would earn pension benefits based on returns that the pension funds can generate. Pension funds would continue to administer the pensions system, but their commission would be cut from 2.2 percent to 1.9 percent in the remainder of the private system and to 1 percent in case they were to be contracted to manage the public segment. There would be some relaxation of restrictions for pension funds to diversify their investment, although their effective ability to do so would depend on implementation.

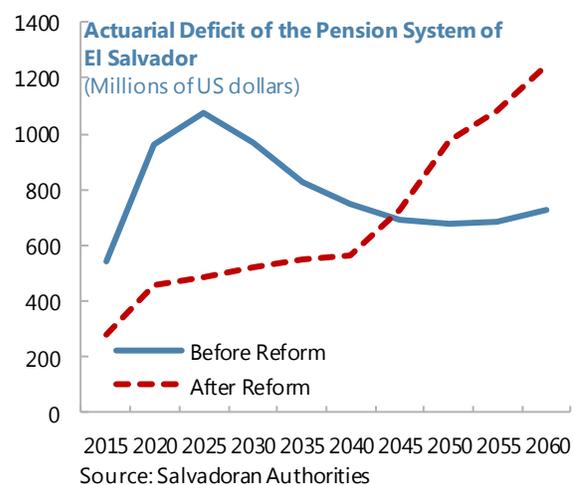
¹⁷ This discussion is based on the draft law submitted to Congress in February 2016. Substantial changes to the draft were reported to be considered, but their status was unclear as of late-May and is not discussed here.

- **Absence of parametric reforms.** No (saving-generating) parametric reforms are envisioned and no major steps to generate additional resources would be considered, with the exception of tightening contributions collections. In effect, the contribution rate for public sector workers has been proposed to be reduced from 14 to 13 percent, which would align it with that of the private sector.
- **Other selected features.** A special entity, National Institute of Pensions, would be created to manage the new public sector pillar. Workers who do not comply with the minimum requirement of 25 years of contributions would receive reimbursement not as a lump sum, but in installments. In this case, they would continue to enjoy free access to the public health system. Regular actuarial reports assessing the long-term liabilities of the pension system are envisioned every two years (which is in line with the best practices).

Assessment

27. **The reform would move the pension system closer to a PAYG type, which entails both advantages and disadvantages.** On the one hand, the new system would offer more predictable replacement rates for the low-income workers, which would initially range from 41 to 82 percent, and would be higher for lower income pensioners. On the negative side, the reform would forgo some of the labor market (closer link between pension benefits and contributions) and fiscal (automatic financing of pension benefits) advantages, although as explained above those advantages were not well-realized in practice. On the whole, it is difficult to make a strong ex-ante argument in favor of one particular system: the result would largely depend on the institutional capacity to implement the system well. It will also depend on the actuarial calculations, which admittedly have a margin of error and are sensitive to particular scenarios.

28. **The implementation of the proposal would not significantly improve the fiscal position.** Actuarial deficits post-reform would be initially lower than in the pre-reform scenario, but significantly higher in the outer years. The impact on NPV of unfunded liability would be ambiguous: there would be some savings from rescinding one major benefit top-up of 2006, but also some additional costs – the net impact would depend on a detailed micro-simulation of the effects of reform. The authorities' calculation presented at the time of the draft law submission showed a modest decline in the unfunded liability from 99 to 90 percent of GDP. However, some of the parameters of this calculation need to be updated, and it is impossible to rule out a scenario whereby the NPV of the unfunded liability could increase in the post-reform relative to pre-reform scenario. In addition, the calculation of unfunded liability somewhat unrealistically assumes that there would be no increases in the minimum pension, which would be particularly costly in this post-reform scenario.



29. **The reform would have substantial accounting benefits of lower measured public debt and deficits.** By bringing assets and contributions within the government sector, measured fiscal deficits could initially decline by about 1½ percent of GDP, reflecting not only contribution revenues but also lower net interest payment on pension bonds. At the same time, “headline” public debt would decline by about 8 percent of GDP. As per the actuarial analysis, these accounting improvements would however not imply an improvement in the underlying fiscal position: while the deficits would initially be lower they would grow at a faster rate.

30. **The proposal entails moderate fiscal cash-flow benefits.** The extent of those benefits would largely depend on the amount of (partly temporary) financing that could be generated from transferred assets. From a flow perspective, the liquidity benefits for the budget from shifting to the mixed system would not be large: the budget would get most pension contributions revenues, but it would have reduced financing from pension funds. Still, there could be a moderate increase in cash flow benefits in the event that the government would continue to rely on pension fund resources to finance its expenditures. Its capacity to do so is however unclear given that the authorities have emphasized the need for greater diversification of pension fund assets in the mixed system, with the purchases of pension bonds not proposed being mandatory anymore.

31. **The reform could have adverse implications for pension fund operations and the broader investment climate.** Taking into account reduced commissions, the business of the pension funds could decline considerably. In addition, there could be substantial uncertainty over the dynamism of the higher-income segment of the pension system that would provide supplementary pensions. Such segments are typically more volatile, and some instability could be expected due to the uncertainty over new rules, including whether the pension funds would have enough autonomy to manage their assets. There could also be increased withdrawal from pension funds by those participants who fulfilled requirements for lump-sum reimbursement. More broadly, the signal of transferring assets to the public sector could be interpreted by parts of the investor community and the public as confiscation, with repercussions for the investment climate.

32. **The proposal would have an ambiguous effect on alleviating social sustainability problems.** The draft law does not include steps to broaden coverage among the poor, for lack of resources to enhance the noncontributory pillar. With respect to income distribution, the overall progressivity of the reform package is difficult to assess in the absence of detailed data: it includes both progressive (a robust flat pension for the lower income contributors) and regressive (a reduction in calculated lump-sum benefits, which generally accrue to the poor)¹⁸ elements.

33. **Overall, the reform would have a rather small (and ambiguous) impact on sustainability, but may entail sizable implementation risks.** The latter could comprise a possibility of political, legal, institutional, and financial disturbances and uncertainty involving pension fund assets and liabilities as well as pension rights. In addition, there would be substantial technical implementation risks due to limited government capacity to manage the transfer and

¹⁸ It has however been reported that this regressive element of the package could be reconsidered in parliament.

activity of pension accounts. Finally, it is possible that, consistently with the practice of the last few years, the proposal would be augmented with elements that could increase its fiscal cost either in the process of parliamentary approval or subsequent implementation.

D. Recommended Reform Strategy

34. **A more ambitious and comprehensive strategy is needed to deal with the root causes of the pension sustainability problem.** Such a strategy could be sufficiently flexible to maximize consistency with elements of the authorities' current proposal, or any proposal that could emerge as part of a societal consensus. In this context, the share of private versus public sector ownership, or defined contributions versus defined benefit schemes, would likely be secondary – in principle, either set-up for the system could be consistent with sustainability requirements. There are however technical pension system parameters that need to be targeted for sustainability in light of the initial situation and cross-country experience.

35. **Parametric reforms are the most significant policy tool for tackling the actuarial imbalances.** The disparity between contributions and benefits could be bridged either by increasing contributions or raising the length of working life relative to the retirement period. Parametric reforms are the only direct tools for regaining this balance. Indirect tools such as tax breaks to incentivize greater coverage would be much less effective, and could have significant collateral damage, such as a potential loss of tax revenues.

36. **Unlike most other steps, parametric adjustments to retirement ages would tend to have beneficial, simultaneous effect on both fiscal and social sustainability aspects in El Salvador.** Increases in retirement ages (and required years of contributions), other things being equal, would generate fiscal savings in a defined benefit system and also help raise replacement rates in a defined contributions system. Such increases in retirement ages, and aligning those for men and women, are long overdue in El Salvador given its outlier status on retirement ages with most of its regional peers. By contrast, the case for increasing contribution rates is much less clear cut due to potential disincentives to participate in the labor market, and the fact that in El Salvador the contribution rates are not low compared to most countries in the region.

37. **Despite their ultimate effectiveness, the parametric reforms would still have a relatively slow impact and thus need to be introduced soon.** In light of accumulated delays in adjusting parameters and the established practice of grandfathering pension beneficiaries, the effects of new measures would be relatively back-loaded. Thus, realistically, the reforms could only partially reduce the unfunded liability that results from "transition costs," but can play a crucial role in generating long-term savings, including supporting the viability of the defined contribution system in the future.¹⁹ Also, those savings could be used to create additional fiscal space for the much needed increases in the coverage of the system, particular in expanding the coverage of the

¹⁹ In El Salvador, it has been estimated that relatively ambitious parametric reforms would absorb only about 30 percent of the transition costs in NPV terms. At the same time, this package would allow to raise replacement rates in the defined contributions system by 10-12 percentage points.

basic universal pension. In any case, given that it takes time for the reforms to have (significant) budgetary effect, they need to be introduced soon.

Table 1. El Salvador: Example of Effects of Selected Pension Measures on Reducing Unfunded Pension Liability 1/ 2/	
<i>(In percent of GDP, NPV terms)</i>	
Changing the method of calculating benefits	19
Increasing minimum contributions period to 30 years	11
Raising retirement age by 5 years	9
Raising contribution rates	4
Source: Superintendency of Financial System of El Salvador.	
1/ The effect of each measure is partial and could be differengt in a package.	
2/ The calculation does not take into effect the beneficial effects of these reforms on raising replacement rates in the new system, which are important for improving "social sustainability."	

38. **To buy time until the parametric reforms make an impact, it would be essential to maintain confidence in the viability of the system and the rules of the game.** With medium-term transition costs being largely exogenous over the next few years, there is little alternative to creating room in non-pension fiscal accounts to address these, which, over the next decade, would likely approach 2-3 percent of GDP annually (although this would depend on whether the current pension reform proposal goes ahead). In the meantime, policymakers should strive to find balance between realistic, affordable, and socially acceptable replacement rates in the system and design incentives for greater contributions compliance and formal labor market participation. Finally, some moderate re-distribution relative to the current system may be warranted given large effective subsidization of the rich. For example, a progressive taxation of the highly unequal pension benefits would both create fiscal space (by raising revenues) and address the distributional concerns.

Appendix I. El Salvador's Pension System

Table 1. El Salvador Pension System Structure

	Sources of funds	Qualifying conditions	Benefits (2013)	Coverage	Administrative
0 pillar	Budget, program cost is 0.07% of GDP	70+ years of age, reside in municipalities with extreme poverty and not receiving any type of pension benefit	\$50 per month, 25% of minimum wage	8% of eligible population, less than 1% of total population	Administered by municipalities (with means-testing and a comprehensive social assistance package)
1 pillar (being phased out)	Initially recognition bonds, since 2006 forced borrowing from pension funds at LIBOR+0.75%, which is nearing its limit in 2016	Born before 1962, 25 full years of work; at least age 55 for women and 60 for men	Benefits a proportion of last 10 years of wages; Replacement rate of around 70%	Less than 2% of total population	A special institution (FOP) is in charge of financing from pension funds. ISSS, and INPEP manage administrative issues
2 pillar (core pension system)	Social contributions (13% private sector and 14% public sector) and returns on pension fund assets (accumulated contributions and recognition bonds)	Born after 1962, 25 full years of contributions; at least 55 for women and 60 for men; early retirement possible if accumulated contributions sufficient to finance a pension 60% above a minimum pension	Pension equal to an annuity stream from assets. Minimum pension of \$207 month. Replacement rates currently 65-70%, falling	Around 10% of eligible beneficiaries; 25% of contributors; less than 1% of total population currently	Two private pension funds compete for contributors and administer individual accounts. Restrictions on asset allocation important (floor for investing in government bonds; ceiling for investing abroad)
3 pillar	Voluntary contributions	Mostly work as add-ons to pillar 2 (same conditions)	Tax benefits	Negligible	Pension funds

References

- Acuña R., 2005, "Pension Reform in El Salvador," Social Protection Discussion Paper No. 0507, World Bank.
- Lazo, J. F., and others, 2010, "Reforma al sistema de pensiones: cobertura, brechas de género y poder adquisitivo," Universidad Centroamericana "José Simeón Cañas."
- Stiftung Marktwirtschaft, 2015, "Honorable States? EU Sustainability Ranking 2015," <http://www.stiftung-marktwirtschaft.com/wirtschaft/themen/generationenbilanz.html>
- World Bank, 2004, "Implicit Pension Debt: Issues, Measurement and Scope in International Perspective," Social Protection Discussion Paper Series No. 0403 (Robert Holzmann, Robert Palacios and Asta Zviniene).

FINANCIAL DEVELOPMENTS IN EL SALVADOR: DEEPENING & INCLUSION AND CROWDING OUT¹

This note assesses El Salvador's financial deepening and inclusion levels, and the risk of 'crowding out' given the recent rapid increase in government borrowing. In El Salvador, financial institutional development is relatively good but inclusion of households is relatively poor. Progress in recent years has been limited but improving the dispute resolution system and access to financial services, and creating and implementing financial deepening strategies could pay dividends in terms of faster growth. While the risks for crowding out via traditional channels appear low, recent fiscal developments are likely to entrench banks' traditional behavior of holding excess liquidity resulting in limited intermediation, particularly for underserved segments of the population.

A. Financial Deepening and Inclusion

Background

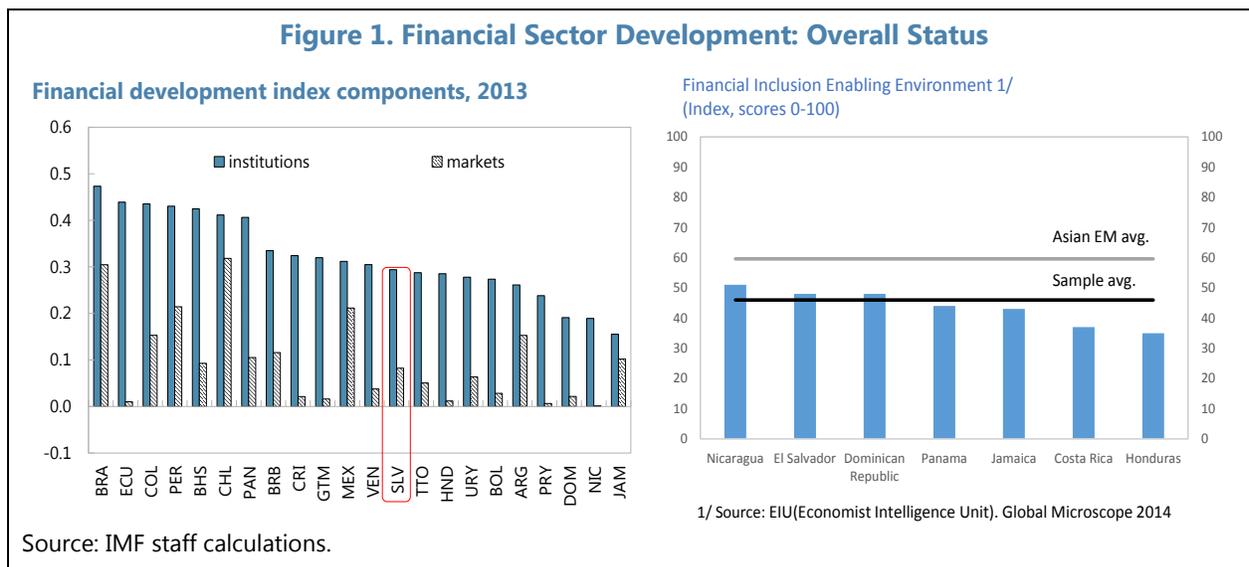
1. **El Salvador's financial development is mixed but the country has a good base to foster progress.** Typical proxies in the literature such as the ratio of private credit to GDP and, to a lesser extent, stock market capitalization are too narrow to capture the broad spectrum of financial sector activities. More sophisticated diagnostics of financial development based on comprehensive indices point to relatively strong financial institutions in El Salvador but an under developed financial market (see Figure 1, Panel 1) (see Appendix 1, Heng and others, 2015 for additional information on financial index). This dichotomy likely reflects the well-established banking sector which is now mostly foreign owned and an under-developed capital market, despite government directed equity investments.² Despite developed institutions, access to financial services by households is weak even as enterprises have ready access (see Panel 1). At the same time, the financial inclusion enabling index from the Economist Intelligence Unit suggests that there is ready potential for El Salvador to deepen and expand financial inclusion (see Figure 1, Panel 2).

2. **Between 2004 and 2013, El Salvador's over-all financial development has been uneven.** Since 2003, there has been little progress on financial sector development. More progress is observed in financial markets (see Figure 2, Panel 1), but this may have been largely driven by policy distortions such as the requirement to relist securities locally despite MOUs with neighboring jurisdictions. As a result, by 2013, El Salvador lagged both LAC and non-Asian/non-LAC EMs groups, even though the country's level of financial institution development exceeded that of both groups in

¹ Prepared by Lukas Kohler, Joyce Wong, Diana Mikhail and Yixi Deng.

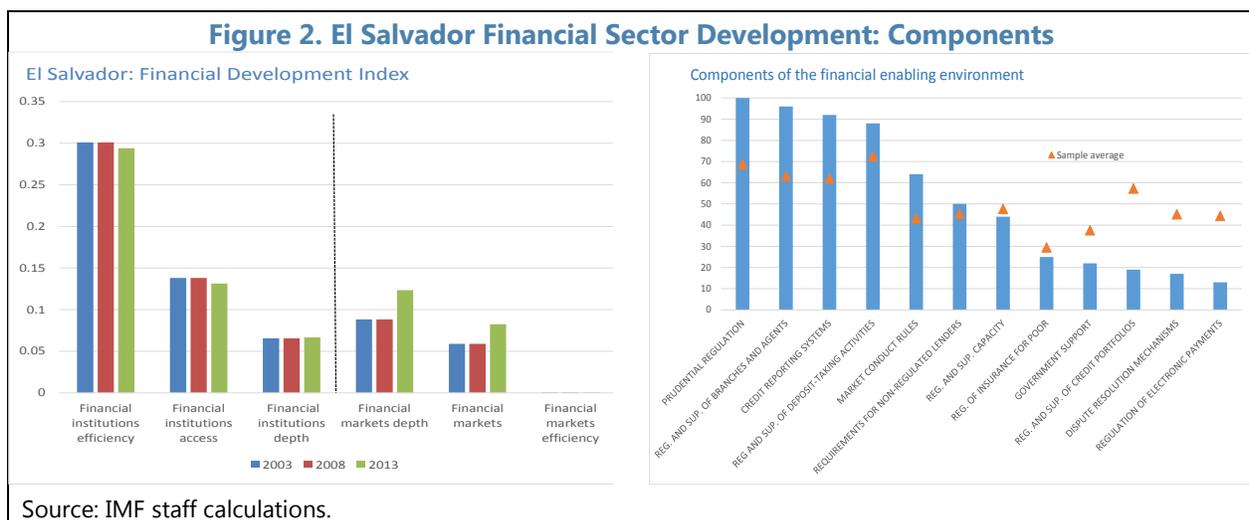
² The authorities do not allow residents to invest in foreign companies not listed in the local stock market, which has forced foreign companies to re-list in the domestic market, likely artificially increasing market capitalization as percent of GDP.

2004 (see also Figure 3).



Decomposing Financial Development and Inclusiveness

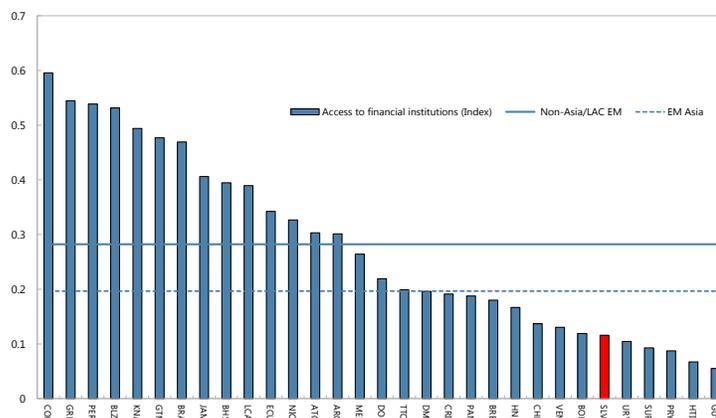
3. **Decomposing the financial development indices reveals the areas likely restricting financial deepening and inclusion.** Salvadoran banks rank relatively well in terms of efficiency due mostly to low deposit-lending spreads, but are weaker in terms of depth and access (see Figure 2, Panel 1). Debt and equity market activity is also weak. An assessment of the enabling environment suggests that prudential regulation and financial infrastructure is strong, but the lack of a government strategy and implementation and poor dispute resolution mechanisms represent barriers to financial inclusion (see Figure 2, Panel 2). In addition to these elements, the credit reporting system (credit bureaus) is fragmented and data is incomplete. At the same time, proposed legal changes will likely further erode the quality of borrower data. While regulation of e-payments metric suggests a shortcoming, the government recently adopted a financial inclusion law which



established regulations for electronic transaction via cell phones. Even now, El Salvador’s base is relatively high with nearly 5 percent of adults accessing mobile bank accounts on a regular basis relative to a regional average of under 2 percent, according to the World Bank.

4. **These factors result in low household access to financial services and the dichotomy between households and enterprises.** El Salvador performs relatively poorly on physical access to financial institutions, this despite a relatively robust financial infrastructure, the high levels of urbanization, dense population, and small geographical area (see text figure). This translates into relatively low use of financial services, particularly by households (see Figure 3 and panel figure). The proportion of people who have accounts at a bank or who use debit cards is relatively low (only 34 percent of people have bank accounts, compared to 47 percent in LAC). El Salvador’s firms, on the other hand, face low cost of funds and low levels of collateral requirements, which translate into high efficiency scores (see Figure 4). El Salvador’s loan-deposit spreads (at under 5 percentage points) and low average posted collateral of about 166 percent are among the lowest in the region. Information costs are also relatively low driven by a relatively well developed credit bureau system covering over 80 percent of the adult population.

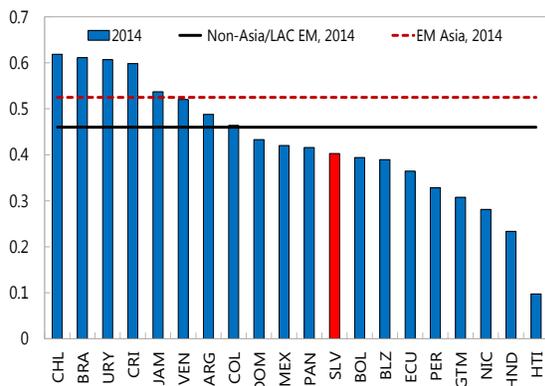
Access to financial institutions (physical infrastructure)



Sources: Financial Access Survey, IMF and staff calculations.

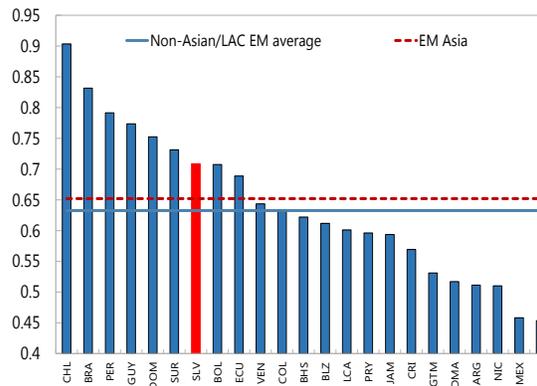
Figure 3. Use of Financial Service in El Salvador: Households and Enterprises

Index of Household Use of Financial Services

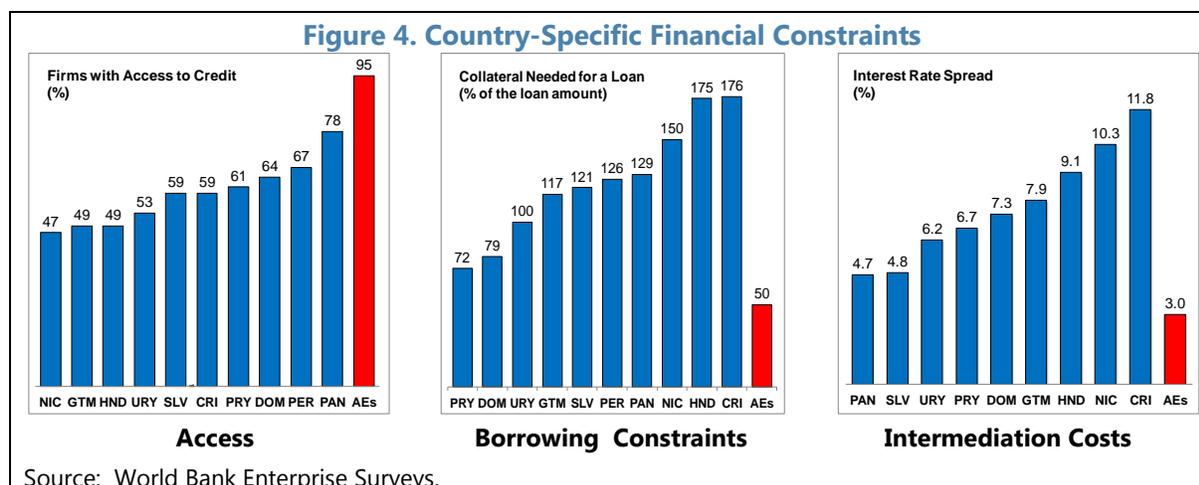


Sources: FINDEX, World Bank and IMF staff calculations.

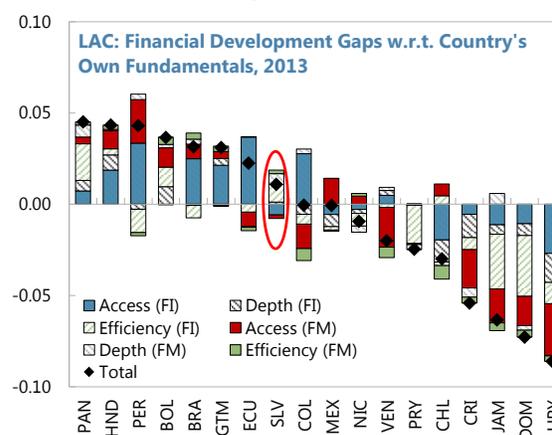
Index of Enterprise Use of Financial Services



Sources: World Bank Enterprise Survey and IMF staff calculations.



5. **These qualitative observations remain accurate even when making considerations for El Salvador's relative economic development: financial institutions are relatively well developed but access is a weakness.** The cross country comparison above does not take into account the country's macroeconomic conditions. Financial development gaps—the deviation of the financial development index from a prediction based on economic fundamentals, such as income per capita, government size, and macroeconomic stability—can help identify potential under or overdevelopment vis-à-vis countries with similar fundamentals.³ Examining these gaps, El Salvador's financial development appears to be above the level predicted by fundamentals, mainly driven by efficiency and depth of financial institutions. However, access to financial services trails the predicted level. At the same time, the factors that raise El Salvador's performance (based on low deposit-loan spreads, low overhead costs, and relatively low collateral requirements) are likely limited to enterprises and well established households, as they do not appear to support financial inclusion. Hence, the over-all outcome should be interpreted carefully as they may only be relevant for smaller portion of the population.

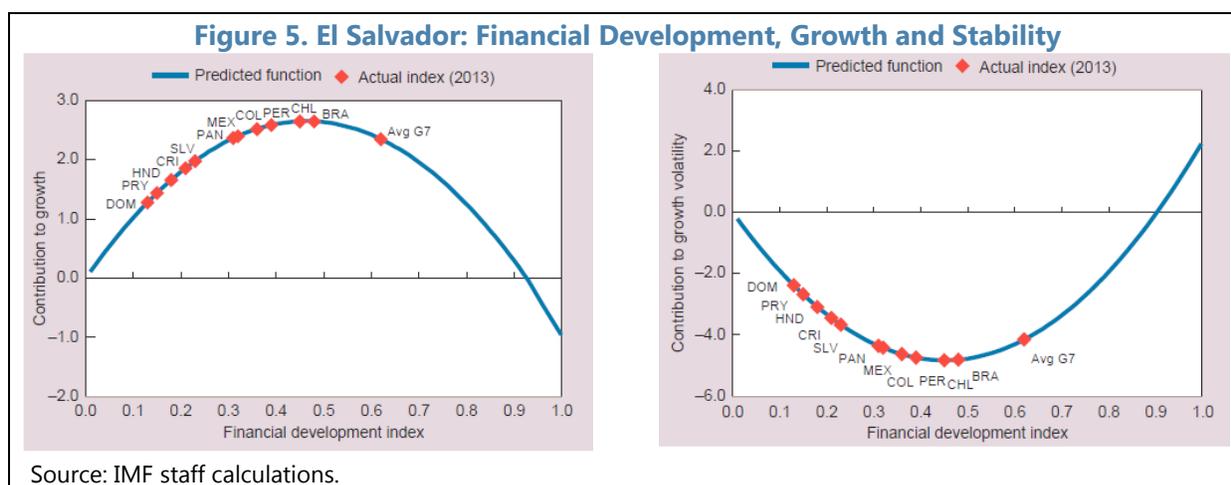


6. **On an aggregate level, financial development and broadening inclusion will likely yield relatively high gains in terms of GDP growth.** An analysis of the relationship between financial development and growth suggests that relatively less financially developed countries have large potential to boost growth by increasing financial development (see Figure 5, panel 1).⁴ Importantly

³ See Heng et. al. *Advancing Financial Development in Latin America and the Caribbean* (WP/16/81).

⁴ Ibid.

for El Salvador, this effect would work through raising total factor productivity (existing entrepreneurs scale up and new entrepreneurs (formerly under-utilized workers) enter) and is particularly effective at early stages of development as returns on capital are relatively high.⁵ However, growth of the financial system also tends to increase growth volatility, highlighting the importance of an institutional framework and fundamentals (see Figure 5, panel 2). Indeed, the inverted U-shape relationship with growth is driven by the depth of financial institutions or a measure of size.



Conclusions and policy recommendations

7. Financial market development is reaching a critical inflection point in El Salvador:

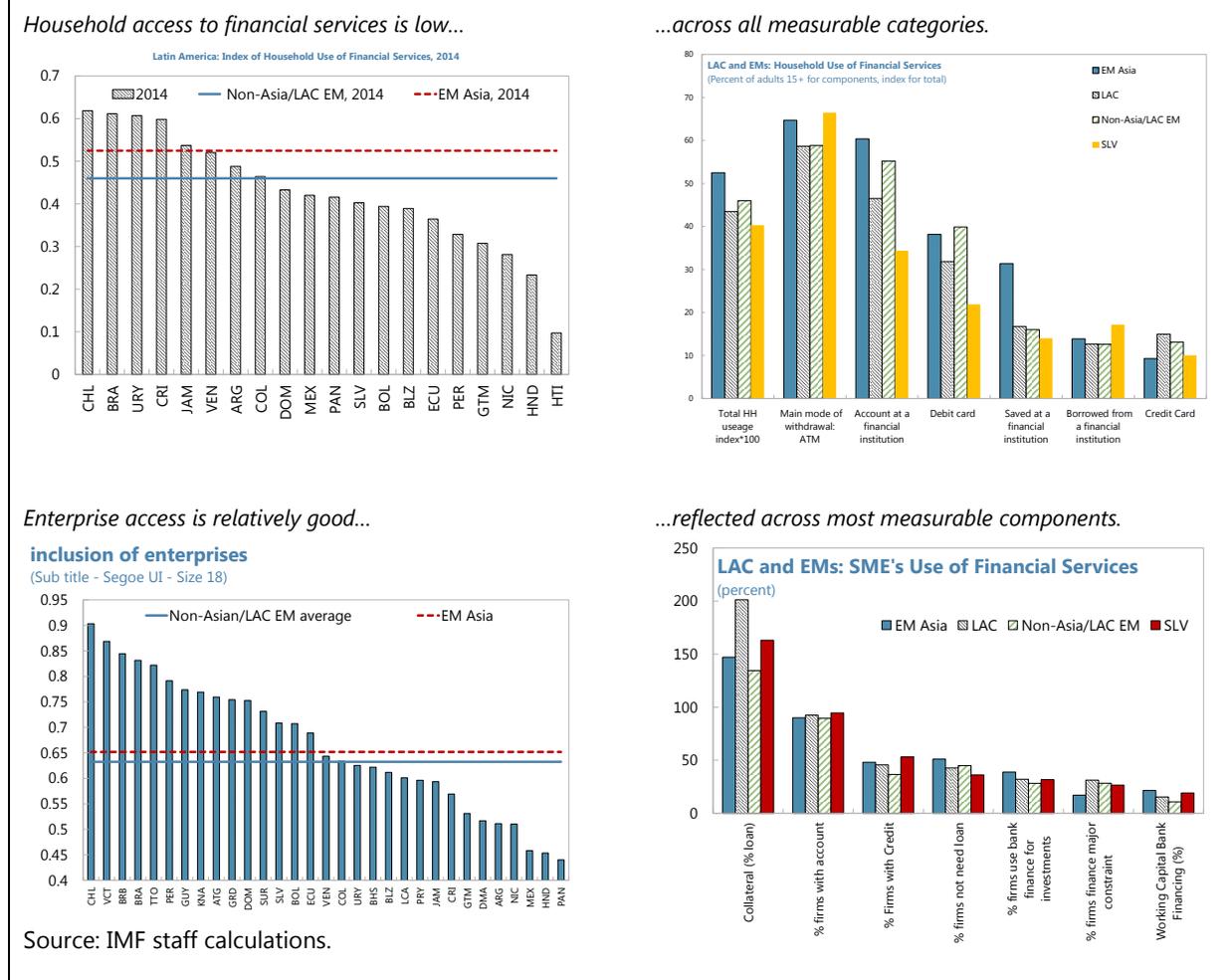
- Despite a well-established banking sector El Salvador's financial system has lost ground vis-à-vis other emerging markets over the last years due to inactivity, particularly in regards to household access and financial institution building.
- Nevertheless, El Salvador benefits from relatively positive financial enabling environments due to a relatively good regulatory environment and well-developed institutions.
- Increasing access to financial by reducing the cost of access such as by strengthening the dispute resolution mechanism and credit reporting system could reap high growth gains.
- However, financial deepening could increase financial volatility highlighting the need to further improve financial supervisory institutions and the country's macroeconomic fundamentals. This is particularly true for El Salvador, which as a dollarized economy, does not benefit from a lender of last resort.

8. **Financial reforms should be properly prioritized and sequenced.** Given that the fundamentals are sticky in the short term, El Salvador should initially aim at removing distortions

⁵ Norris, Ji, Townsend, Unsal 2015.

that prevent the country from reaching its full financial development potential given the current state of macroeconomic fundamentals. Weaknesses in transparency in pricing and dispute resolution frameworks should be addressed while the framework for use of banking correspondents could be strengthened to address problems of low physical access. Further focus on mobile and electronic banking could expand access to financial services, particularly in view of the security situation which may make brick and mortar banking more difficult. Deeper reforms to foster credit expansion through lower collateral requirements, for example, should be coupled with measures to strengthen regulation and supervision, particularly into the unregulated financial services sectors (Sahay, R. et. al, 2015).

Figure 6. Access to Financial Services in El Salvador



B. Crowding Out Credit to the Private Sector

The Theory

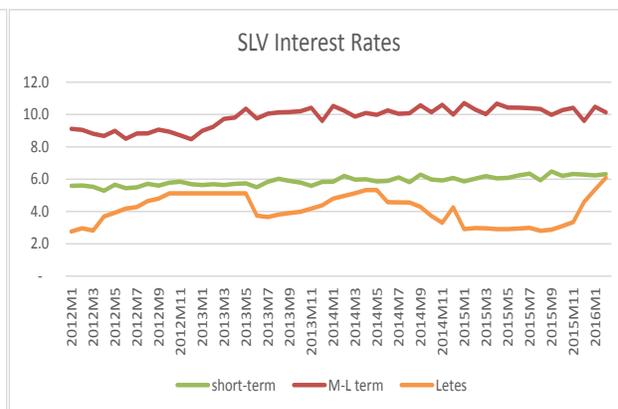
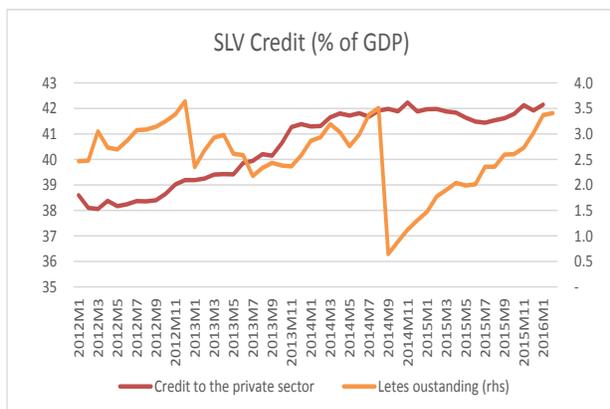
9. **Economic theory suggests that public borrowing tends to displace private sector credit.** The amount of displacement depends on liquidity constraints, access to external financing, and other characteristics of the financial system. Depending on financial resource constraints, public borrowing drives up interest rates, pricing some private borrowers/viable investment projects out of the market. In banking systems with ample liquidity or ready access to external financing, increased public borrowing may have little effect on interest rates and may displace less private credit. However, even in such conditions, credit to the private sector may be displaced if increased public credit reduces banks' incentives to seek out private borrowers (lazy banks theory). On the other hand, increasing low risk (government) assets may allow banks to accumulate additional higher risk (private) assets (risk diversification theory). In some financial systems – characterized by government intervention -- increased public borrowing may adversely affect private credit volumes but have little or no price (interest rate) effects.

10. **An analysis of emerging and developing economies estimate that the coefficient of crowding out ranges from 1 to 1.4.**⁶ The analysis, covering 60 developing economies, measures volumes of credit not interest rates since many developing economies are characterized by heavy government intervention. Controlling for the level of financial depth and institutional quality suggests that crowding out coefficient falls within the upper end of the range. The authors' analysis suggests that the lazy bank model more than off-sets the effect of risk diversification. However, estimations of crowding out must also take into consideration country idiosyncrasies and the financial systems' starting off position in terms liquidity and access to foreign financing.

Recent Developments in El Salvador

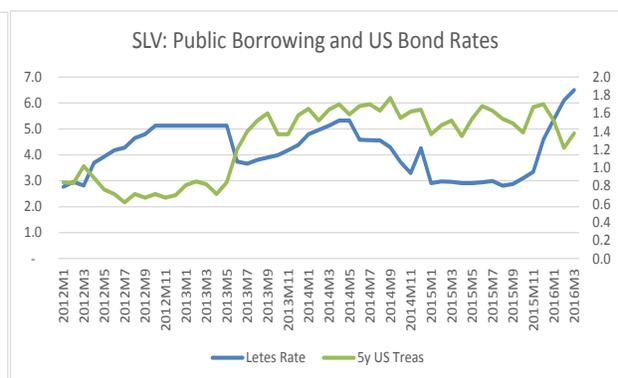
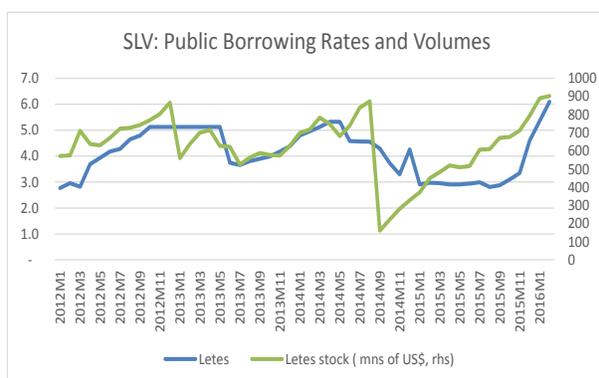
11. **In the context of a political impasse over external borrowing, government borrowing has increased substantially over the past year.** Between February 2015 and 2016, the stock of Letes has doubled from about US\$450 million to over US\$900 million. This has driven up public borrowing costs even as the United States benchmark interest rate is falling. However, the rising interest rates on government securities do not appear to be affecting short- or long-term private borrowing rates. At the same time, volumes of credit to the private sector also do not appear to be affected. Since the government role in the financial sector in El Salvador is relatively light, this surprising dynamic suggests alternative explanations for the lack of evidence for crowding out.

⁶ Emran and Farazi. *Lazy Banks? Government Borrowing and Private Credit in Developing Countries* (June 2009).



Source: BCR and IMF staff calculations.

Source: BCR.



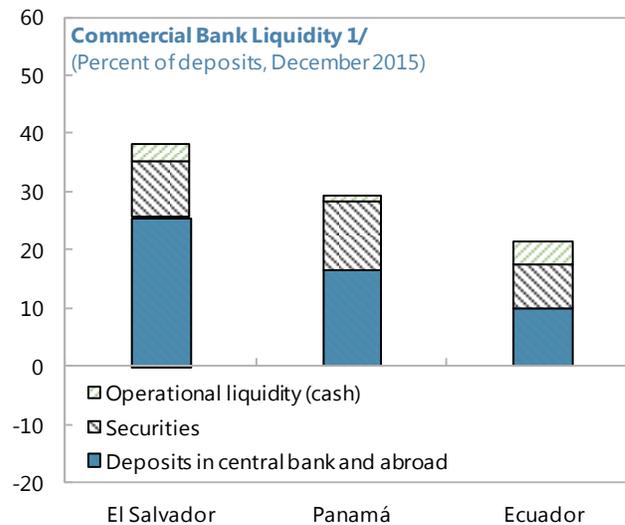
Source: BCR

Source: BCR and Haver

Crowding out in El Salvador

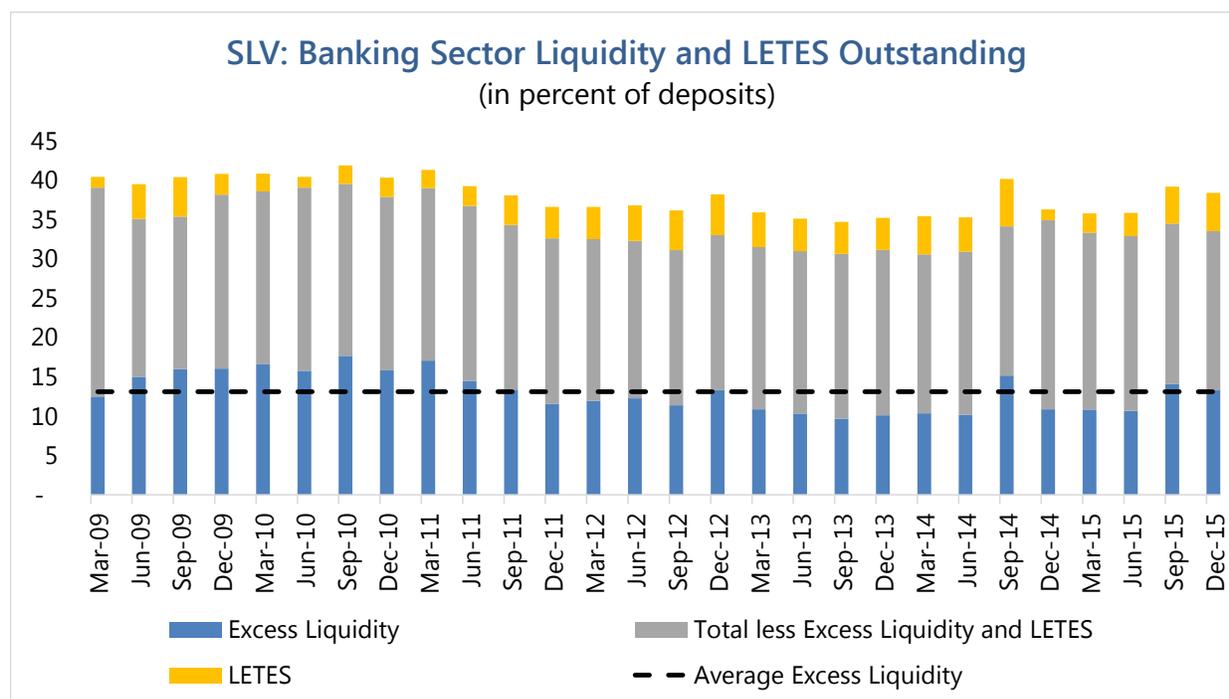
12. The absence evidence for crowding out could be a function of lags or specific characteristics of the financial system in El Salvador.

Ample liquidity and lack of credit worthy borrowers may mute the effects of increased public borrowing. In addition, the Salvadoran banking system is predominantly foreign owned (over 90%), suggesting ample external financing should liquidity constraints become binding. In addition, adverse confidence stemming from fiscal instability may take time to change banks' behavior. Even so, if the result of increased public borrowing is not crowding out of private sector credit, the recent developments are likely to entrench banks' traditional behavior of holding excess liquidity resulting in continued limited intermediation, particularly for underserved segments of the population.



1/ The latest data available for ECU are till July 2015
Source: IFS and IMF staff calculations

13. **The El Salvadoran banking system is characterized by excess – albeit declining – liquidity, which likely mutes the crowding out effect.** Relative to other dollarized economies in the region, the financial sector is significantly more liquid. Since 2009, Salvadoran commercial banks have held an average of about US\$ 1.2 billion or 13 percent of deposits in liquid assets *above* prudential reserve and liquidity requirements (see Figure below). This suggests that banks have sufficient liquidity to absorb government borrowing in the shorter-term without reducing credit to the private sector. In fact, public borrowing appears to be correlated with a change in composition of banks' liquidity towards government securities (Letes), which are eligible in meeting prudential liquidity requirements. Hence, in the short-term, the most immediate effect of increased public borrowing is a reduction in the quality of banks' liquid assets to meet liquidity shocks.



Source: BCR and IMF staff calculations.

14. **An econometric analysis does not suggest a strong case of crowding out** (see Appendix 2 for additional details). The analysis of quarterly data since 2001 suggests that private sector growth is primarily demand driven. The regression analysis suggests that the stock of Letes has only a small negative co-efficient which is statistically significant;⁷ the volume of deposits (supply of financial resources), on the other hand, is not significant. On the price side, evidence for crowding out is also weak. Medium term lending rates are positively correlated to GDP growth, the deposit rate, and external risk; Letes rates are not relevant. However, residuals are large suggesting that other factors are at play and that price driven intermediation is somewhat delinked from standard factors. These surprising dynamics could be explained by excess liquidity and the relatively small

⁷ Granger causality and Wald tests suggest that both $\log(\text{GDP})$ and $\log(\text{letes stock})$ are relevant factors explaining $\log(\text{credit_priv})$.

cadre of credit worthy borrowers resulting in relatively stable lending rates that are somewhat delinked from standard supply and demand factors.

15. **However, in the medium term, should fiscal instability continue and result in the emergence of liquidity constraints, crowding out of private sector could occur.** El Salvadoran banks have suggested in the past that an absorptive ceiling for Letes is around US\$800 million. With current amounts of Letes outstanding exceeding US\$ 1 billion (of which about US\$200 billion is held by non-residents) and taking into consideration projected fiscal deficits over the next months, liquidity constraints could become binding in the second half of 2016. This assessment is supported by high Letes holdings relative to system deposits. This measure has increased from a low base of 1.4 percent in December 2014 to nearly 5 percent in December 2015, which exceeds the five-year average holdings by over 1 percentage point of deposits (see liquidity figure above).

16. **The econometric analysis above suggests that the risks of crowding out – and hence the economic costs of increased public borrowing – increase as liquidity conditions become more constrained.** Limiting the sample to periods in which banks' liquidity was one standard deviation below the period average, resulted in substantially higher negative and more statistically significant coefficient for Letes holdings as an explanatory variable for private credit growth. As one would expect, as liquidity tightens banks need to increasingly decide between lending to the government and lending to the private sector. For El Salvador, this measurable dynamic suggests that the risk and cost of crowding out would increase as excess liquidity conditions decreased in response to improved LOLR capacity and greater financing depth and inclusion.

References

- Dabla-Norris, Ji, Townsend, Unsal, "Identifying Constraints to Financial Inclusion and Their Impact on GDP and Inequality: A Structural Framework for Policy", IMF Working Paper (2015).
- Demirguc-Kunt and Klapper, "Measuring Financial Inclusion: The Global Findex Database", World Bank Policy Research Working Paper (2012).
- Emran and Farazi, "Lazy Banks? Government Borrowing and Private Credit in Developing Countries", (June 2009).
- Heng, Ivanova, Mariscal, Ramakrishna, Wong, "Advancing Financial Development in Latin America and the Caribbean", IMF Working Paper (2016).

Appendix I. Financial Development Index

To better capture different facets of financial development, a comprehensive and broad-based index was constructed across 123 countries for the period 1995–2013 (see Appendix and Heng and others, 2015). The index is broken down into two major components: financial institutions and financial markets. Each component is then split into access, depth, and efficiency sub-components. These sub-components, in turn, are constructed based on a number of underlying variables that track development in each area.

Sources and Data Processing

The data generally cover the period 1995 to 2013 with gaps, in particular, for countries in the Middle East, Sub-Saharan Africa and Latin America. For some variables, e.g., ATMs per thousands of adults, the data were only available starting in 2004. Our data came from numerous sources: World Bank's World Development Indicators (WDI), FinStats, Non-Bank Financial Institutions database (NBFI), Global Financial Development database (GFD); International Monetary Fund's International Financial Statistics (IFS); Bureau van Dijk, Bankscope; Dealogic's debt capital markets statistics; World Federation of Exchanges (WFE); and Bank for International Settlements' debt securities statistics.

After a gap filling process to generate a balanced panel, all variables were normalized using the following formula:

$$I_{x,it} = \frac{x_{it} - \min(x_{it})}{\max(x_{it}) - \min(x_{it})},$$

where $I_{x,it}$ is the normalized variable x of country i on year t , $\min(x_{it})$ is the lowest value of variable x_{it} over all i - t ; and $\max(x_{it})$ is the highest value of x_{it} . For variables capturing lack of financial development, such as interest rate spread, bank asset concentration, overhead costs, net interest margin, and non-interest income, one minus the formula above was used.

The weights were estimated with principal component analysis in levels and differences, factor analysis in levels and differences, as well as equal weights within a subcomponent of the index. For most of the methods the weights were not very different from equal weights and econometric results were robust to the method of aggregation. For simplicity, we use an index with equal weights.

Regression Frameworks

Regressions use 5-year averages in order to abstract from cyclical fluctuations, and estimated using dynamic panel techniques common in the growth literature.

Financial Development Gaps

The benchmarking regressions link financial development (FD), institutions (FI) and markets (FM) development indices to fundamentals. Following the literature on benchmarking financial development (Beck and others 2008) fundamentals (\mathbf{X}_{it}^{FI}) included initial income per capita, government consumption to GDP, inflation, trade openness, educational attainment proxied by the average number of years of secondary schooling for people 25+, population growth, capital account openness, the size of the shadow economy (given its importance for the LAC region) and the rule of law. Instruments (\mathbf{Z}_{it}) for financial development such as the rule of law and legal origin dummies were also used. Predicted norms were computed using the following equation:

$$FI_{it} = \delta'_1 \mathbf{X}_{it}^{FI} + \delta'_2 \mathbf{Z}_{it} + h_t^{FI} + e_{it}^{FI},$$

where FI_{it} stands for one of the financial indices (FD, FI or FM). Gaps shown are the difference between the actual values of the index and the calculated norms.

Financial Development, Growth, and Stability

The link between financial development, growth and stability was examined using a dynamic panel regression framework. Real GDP growth (DY_{it}) is linked to financial development allowing for a potential non-linearity by adding a square of financial development while controlling for other factors that are likely to affect growth (below). In the case of individual sub-components of FI and FM, the interaction term between these two indices is included. The controls for the growth regression \mathbf{X}_{it}^Y were the same as in the benchmarking regression (\mathbf{X}_{it}^{FI}) with two additional variables: ratio of FDI to GDP and capital account openness.

The impact of financial development on financial and macroeconomic instability used a similar framework. Financial instability (FS_{it}) is measured by the first principal component of the inverse of the distance to distress (z-score),¹ real credit growth volatility, and real and nominal interest rate volatility. This combined variable allows capturing different facets of financial instability, thus improving over previous research which typically focused on a single variable. Growth volatility (GV_{it}) is measured by the standard deviation of GDP growth. The controls included initial income per capita, government consumption to GDP, trade openness, changes in terms of trade, growth in per capita income, capital flows to GDP, exchange rate regime, a measure of political stability, and an indicator for whether a country is an offshore financial center.

The following three equations were estimated using Arellano-Bond approach:

$$DY_{it} = (a_0 - 1) \ln(Y_{it-1}) + b' f(\text{FinDev}_{it}) + \dots \\ g' \mathbf{X}_{it}^Y + h_t^Y + n_t^Y + e_{it}^Y$$

¹Z-score is a measure of financial health. Z-score compares the buffer of a country's commercial banking system (capitalization and returns) with the volatility of those returns.

$$FS_{it} = a_0 FS_{it-1} + b' f(FinDev_{it}) + g' \mathbf{X}_{it}^S + \dots$$

$$h_i^S + n_i^S + e_{it}^S$$

$$GV_{it} = a_0 GV_{it-1} + b' f(FinDev_{it}) + g' \mathbf{X}_{it}^V + \dots$$

$$h_i^V + n_i^V + e_{it}^V$$

Where $f(FinDev_{it})$ have two forms, one with the aggregated index: $f(FD_{it}) = b_1 FD_{it} + b_2 FD_{it}^2$;

and one with the subcomponents: $f(FI_{it}, FM_{it}) = b_1 FI_{it} + b_2 FI_{it}^2 + b_3 FM_{it} + \dots$

$$b_4 FM_{it}^2 + b_5 FI_{it} \times FM_{it}$$

Table A1 shows the results of the estimated equations for growth and instability.

Table A1. Estimated Equations

Dependent Variable	Financial Instability		Growth Volatility		Growth	
FD	-6.457*	(3.814)	-21.42***	(7.270)	11.47*	(6.279)
FD2	6.263	(5.735)	23.74**	(10.82)	-12.38*	(6.556)
Δ FD	5.283**	(2.160)	8.423**	(4.008)	5.698*	(3.075)
FI	-13.75**	(5.419)	-27.89***	(9.533)	30.83***	(8.788)
FI2	18.64**	(8.123)	36.38**	(14.45)	-48.36***	(11.58)
FM	-0.772	(3.119)	-6.779	(5.345)	-0.586	(3.987)
FM2	3.360	(4.886)	18.02**	(8.324)	-12.35**	(5.314)
FM*FI	-5.140	(9.730)	-5.354	(15.81)	27.27**	(13.16)
Δ FI	4.753**	(2.114)	14.08***	(3.708)	7.088**	(2.958)
Δ FM	3.190*	(1.672)	-2.335	(2.846)	0.508	(2.222)
Obs.	143	143	158	158	301	301

Source: IMF staff calculations.

Note: Standard errors in parentheses*** p<0.01, ** p<0.05, * p<0.1

Appendix II. Econometric Analysis of Crowding-Out in El Salvador

Data

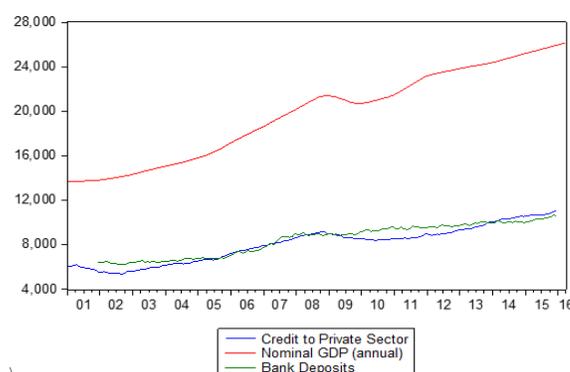
The data is taken from IFS, Bloomberg, and the Banco Central de Reserva website. It consists of quarterly series since 2001 for nominal GDP, stock of Letes outstanding, Letes rates, medium and short-term lending rates, deposit rates, credit to the private sector, EMBIG spreads, bank liquidity (deposits at the central bank and abroad, securities, and cash). Quarterly GDP is the sum of the current and previous three quarters to minimize seasonality effects. Rates on 30, 90, and 360 day deposits are averaged since the composition of deposits is not available.

Empirical Results

- Private sector credit is driven demand (GDP) not by supply factors (deposits). This would appear to be consistent with excess liquidity in the system.

Dependent Variable: LCREDIT_PRIV
Method: Least Squares
Date: 04/20/16 Time: 17:14
Sample (adjusted): 2001M12 2015M12
Included observations: 169 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGDP	1.189206	0.080962	14.68842	0.0000
LDEPOSITS	-0.203888	0.090789	-2.245724	0.0260
C	-0.925182	0.142571	-6.489252	0.0000
R-squared	0.968877	Mean dependent var	8.992508	
Adjusted R-squared	0.968502	S.D. dependent var	0.200866	
S.E. of regression	0.035649	Akaike info criterion	-3.812603	
Sum squared resid	0.210961	Schwarz criterion	-3.757043	
Log likelihood	325.1649	Hannan-Quinn criter.	-3.790055	
F-statistic	2583.851	Durbin-Watson stat	0.044520	
Prob(F-statistic)	0.000000			



- The coefficient for Letes stocks as an explanatory variable is negative but small.

Dependent Variable: LCREDIT_PRIV
Method: Least Squares
Date: 04/19/16 Time: 16:44
Sample (adjusted): 2002M01 2015M12
Included observations: 157 after adjustments

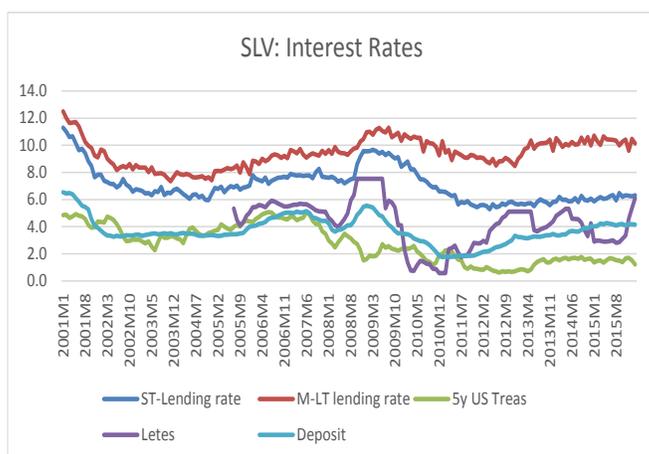
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGDP	1.018555	0.019954	51.04403	0.0000
LLETES_STOCK	-0.011457	0.005931	-1.931614	0.0552
C	-1.009744	0.178537	-5.655647	0.0000
R-squared	0.962826	Mean dependent var	9.017358	
Adjusted R-squared	0.962343	S.D. dependent var	0.186147	
S.E. of regression	0.036123	Akaike info criterion	-3.784876	
Sum squared resid	0.200945	Schwarz criterion	-3.726476	
Log likelihood	300.1128	Hannan-Quinn criter.	-3.761158	
F-statistic	1994.338	Durbin-Watson stat	0.048797	
Prob(F-statistic)	0.000000			

- Restricting the period to quarters of relatively low liquidity increases the negative coefficient for crowding out as well as making it more statistically significant. The period is defined as quarters in which bank liquidity (defined as cash, deposits at the central bank or abroad, and holdings of government securities as a percent of total deposits) is one standard deviation lower than average liquidity over the period.

Dependent Variable: LCREDIT_PRIV
 Method: Least Squares
 Date: 04/20/16 Time: 11:46
 Sample: 2006M03 2007M05 2012M08 2015M05
 Included observations: 49

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LLETES_STOCK	-0.043952	0.009435	-4.658564	0.0000
LGDP	1.015733	0.037691	26.94909	0.0000
C	-0.777467	0.337300	-2.304969	0.0257
R-squared	0.964512	Mean dependent var		9.130296
Adjusted R-squared	0.962969	S.D. dependent var		0.125135
S.E. of regression	0.024080	Akaike info criterion		-4.555585
Sum squared resid	0.026673	Schwarz criterion		-4.439759
Log likelihood	114.6118	Hannan-Quinn criter.		-4.511641
F-statistic	625.1060	Durbin-Watson stat		0.321429
Prob(F-statistic)	0.000000			

- Interest rates in El Salvador are relatively stable compared to internal and external factors, especially since 2010. This suggests weak price signaling and intermediation. As expected, the correlation to domestic and external interest rates, as well as a broad risk measure, is relatively weak, with large residuals. The Letes rate coefficient is negative, suggesting crowding in from public borrowing.



Dependent Variable: LINTEREST_MT
 Method: Least Squares
 Date: 04/21/16 Time: 11:48
 Sample (adjusted): 2005M07 2015M12
 Included observations: 126 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGDP	0.301675	0.071258	4.233546	0.0000
LDEPOSIT_RATE	0.141880	0.027974	5.071841	0.0000
LEMBIG	0.107301	0.018760	5.719709	0.0000
LLETES_RATE	-0.059080	0.011593	-5.096131	0.0000
L5YTREAS	0.036361	0.018159	2.002314	0.0475
C	-1.482822	0.702486	-2.110820	0.0369
R-squared	0.577015	Mean dependent var		2.270493
Adjusted R-squared	0.559390	S.D. dependent var		0.077387
S.E. of regression	0.051368	Akaike info criterion		-3.053155
Sum squared resid	0.316640	Schwarz criterion		-2.918094
Log likelihood	198.3488	Hannan-Quinn criter.		-2.998284
F-statistic	32.73954	Durbin-Watson stat		0.730792
Prob(F-statistic)	0.000000			