Responses to the reviewers' comments

Manuscript No. 2018-51

Title: Do economic and financial integration stimulate economic growth? A critical survey

Dear Editor,

Thank you for the opportunity given to revise the paper. We appreciate the insightful comments of the reviewers, which help to improve the quality of the manuscript. We address the comments point-by-point as follows:

Reviewer #1

The paper contains a thorough literature survey of the links between economic integration, financial integration, and economic growth. Some revisions seem appropriate, listed in the following:

1. Proof-reading, preferably by a native speaker is certainly needed.

Responses:

The paper is proofread and edited by a native English speaker, and we believe that this revised version is in good quality of English.

2. The summary in Table 1 is informative; however, it is not clear why it only summarises some studies (not referred to in the text); I suggest to include a summary table on all studies mentioned in the text, and to shorten the text by concentrating on differences between the studies.

Responses:

Table 1 was included in the study as a complement to the empirical studies that already surveyed in the text. We only summarized the studies that were not referred to in the text to save space and avoid unnecessary repetition. We think that by including all studies in Table 1 will make the table too long and waste valuable space. In addition, we showed the differences between the studies by dividing the survey into different sections based on their findings/conclusions.

3. In the description of the studies, the methodologies and country groups should be mentioned explicitly.

Responses:

We now included the methodologies and the country groups in the description of the studies.

4. The sub-section headlines are misleading. E.g. the studies cited in section II.2 certainly did not intend to find no significant link. Maybe section II.1 could be named "Studies finding a significant...", and section II.2 "Studies finding no significant..."

Responses:
We rephrased the sub-section headlines as follows:
Section II.1 *Studies that Found Significant Effects of Economic Integration on Economic Growth*
Section II.2 *Studies that Cannot Find Significant Effects of Economic Integration on Economic Growth*

5. In the first paragraph of section II.1 the explanation of ECOWAS should come first, prior to the acronym.

Responses:
We now presented the meaning of ECOWAS before the acronym as follows:
"Economic Community of West African States (ECOWAS)"

6. In the first paragraph of section II.1: cross-section, NOT cross-session.

Responses:
We corrected the word to "cross-section".

7. Explain the augmented Solow model

Responses:
We added a footnote to explain the augmented Solow model:
"The augmented Solow model is the Solow growth model augmented with human capital."

8. Page 8: "They also found evidence of robust institutional deterioration especially in the area of corruption in EU members that have adopted the Euro." This finding derives interpretation and explanation.

Responses:
To avoid confusion, we deleted the sentence.

9. Page 10: "but the GDP growth rate of EU would decline from 0.1% to -0.5% while that of India would decline from 1.1% to 0.5%" I guess the growth rate would be lower by xy percentage points.
Page 11: "effect of 4%-40%". What do these figures mean? Compared to what?

Responses:
The sentences have been corrected, it now reads as follows:
"…but the GDP growth rate of EU would decline from 0.1 percentage points to -0.5 percentage points while that of India would decline from 1.1 percentage points to 0.5 percentage points if UK exit from the EU."
"Similarly, Bun and Klaassen (2002) documented that euro adoption has significantly increased bilateral trade with an effect of 4-40 percentage points. Moreover, Micco et al. (2003) showed that monetary union has significant positive impact of about 4-10 percentage

points on bilateral trade between member countries relative to trade between other pairs of countries, and 8-16 percentage points relative to trade among non-member countries."

10. Page 11: "They examined the impact of Euro on trade in 19 EU countries" Euro area countries?

Responses:
We clarified the statement as follows:
"The 19 EU countries (the Euro area which represents a monetary union of 19 out of the 28 European Union member states which adopted the euro as their common currency and sole legal tender)…"

11. Page 21: quality of institutions is NOT a macroeconomic indicator

Responses:
We rephrased the sentence as follows:
"Nonetheless, the study found that financial liberalization has positive effects on resource mobilization and financial deepening after accounting for some variables namely inflation, quality of institution and fiscal imbalances."

12. Page 23: WTO, not GATT.

Responses:
We have corrected the sentence to read: … "if the rules of World Trade Organization (WTO) are reinforced…"

Reviewer #2

1. The paper surveys the literature on the impact of economic and financial integration on growth. While the scope to consider the growth effects from different forms of integration is promising, the paper needs substantial revision and editing to achieve the standards of a survey, that is, to offer a rigorous and illuminating guide through decades of theoretical and empirical literature. Two major sets of critical issues arise in relation to contents and structure. It is not very clear what the novel contribution of the paper is with respect to the existing surveys, which, however, are not given sufficient recognition in the paper (see, for instance, Stolbov (2013) and Gehringer (2015) for recent examples of surveys on the finance-growth nexus and Federico (2018) on market integration).

Responses:
We strengthened the contributions of the paper by adding the following paragraphs on page 5:
"The debates on the role of economic and financial integration on economic growth have intensified in recent years. As different empirical studies have focused on whether economic integrations or unions in Europe, Asia, Africa and Latin America have long-run economic benefits for member countries. Scholars and policy-makers have argued about the economic benefits of economic union to member states even before Britain's vote to quit the EU in June 2016. Brexit, and the political pressures on some member countries to quit the economic union

has again questioned the economic benefits of economic integration or union to member countries. Therefore, it is timely to conduct a critical survey of the recent empirical literature on integration-growth nexus in order to shed light on the role of economic integration or union on economic growth. We also incorporated financial integration in the analysis because it is conceptually considered as an integral part of economic integration, albeit in practice, economic integration sometimes may not be deep enough to assure adequate degree of financial integration.

Although some studies (e.g. Ang, 2008; Gehringer, 2014; Levine, 2005; Stolbov, 2013) have conducted surveys on the impact of financial liberalization or development on economic growth, but these papers are cursory with respect to economic integration or union. Hence, we precisely seek to fill this gap by focusing on the impact of economic integration or union on economic growth. Another distinctive feature of our paper is that we also analyze the literature on the link between the adoption of common currency and economic growth. We show the channels through which economic integration or union exerts its influence on economic growth such as financial integration, productivity growth, capital accumulation and trade. Hence, we make important contributions to the extant literature by aggregating the empirical studies on the nexus between economic integration or union and economic growth. To the best of our knowledge, this is the first study that critically surveys the recent literature on this issue. This is fundamental because a critical evaluation of the long-run economic benefits of integration or union to member countries could influence policy decisions-making. The output of this study could serve as guidelines for policymakers and government in making better, informed and more accurate decisions about their participation in economic integration or union."

2. The paper is very cursory on the many aspects taken into consideration. This starts with the treatment of the two integration modes. By definition, economic integration involves also financial integration, although in practice (the EU is a case in question) economic integration is sometimes not deep enough to assure a sufficient degree of financial integration as well. However, this fact is not taken fully into consideration apart from briefly stating that economic integration influences financial integration.

Responses:

We added more discussion on the conceptual issues relating to the two integration modes namely, economic integration and financial integration as follows on page 3:

"Conceptually, economic integration involves the unification of economic policies (coordination of monetary and fiscal policies) between different countries via full or partial elimination of tariff and non-tariff restrictions on trade among them. According to Jhingan (2009), it refers to "a decision or process whereby two or more countries combine into a larger economic region by removing discontinuities and discriminations existing along national frontiers, and by establishing certain elements of co-operation and co-ordinations between them" The various levels of economic integration include free trade area, customs union, common market, and economic union. The potential benefits of economic integration include better allocation of resources, improvement in the quality and quantity of factor inputs, increase in productivity, increase in economic efficiency and improvement in trade, better exploitation of economies of scale, improvement in standard of living as well as establishment of closer cultural, economic and political ties among member states. Moreover, economic union represents a kind of trade bloc that comprises a common market with a custom union; and the members have common policies on regulation of products, free movement of goods, services,

capital and labour as well as a common external trade policy. When an economic union entails a common currency among member states, it becomes an economic and monetary union.
On the other hand, financial integration occurs when the financial markets of neighbouring, regional or global countries are closely linked together. It entails the eradication of restrictions on cross-border financial operations so that financial institutions can freely operate, firm can directly borrow or raise fund, and equity and bond's investors can directly invest across countries without restrictions. It includes sharing of information, best practices and technologies among financial institutions, cross-border capital flows, direct access of firms to funds and investors to investment in international capital markets, trading of domestically innovated financial products in the international capital markets as well as involvement of foreign investors in domestic financial markets. Although economic integration encompasses or influences financial integration, but practically (e.g. the case of the EU), economic integration sometimes may not be sufficiently deep to assure adequate degree of financial integration."

3. Moreover, the survey does not provide sufficiently deep considerations on the reasons for sometimes conflicting results obtained in the empirical literature. The reader is offered a rather superfluous and not particularly well-structured description of empirical papers which report either positive or negative or no results on the impact of integration (economic or financial) on growth. In so doing, however, the content of the dedicated sections is not always kept consistent (for instance, in sections supposed to discuss no effect, papers with significant effects are surveyed).

Responses:
We added a brief discussion on the plausible reasons for the conflicting results of some previous empirical studies as follows on page 15:
"Although the integration-growth nexus has received the attention of several scholars in the past decades but there is no general consensus among scholars on the impact of integration on economic growth. The differences in the empirical outcomes could be attributed to the use of different econometric methods, proxy for measuring integration, the time period covered by the analysis, the nature of the data used, the countries covered by the studies, etc. It could also be attributed to failure to account for diverse economic and econometric issues such as endogeneity, autocorrelation, heteroskedasticity, omitted variable bias, etc. The functional forms of the models (linear or non-linear, static or dynamic, etc) employed by the empirical studies could also be responsible for the heterogeneous outcomes."

In-line with the reviewer's comment, the content of the sections is now consistent, with each section focusing on a specific area. We amended the headline of Section III.2 to "Studies that Found Negative Effect or Cannot Find Significant Effect of Financial Integration on Economic Growth" to accommodate the studies that reported either negative effect or insignificant effect.

We also added a new section, Section II.3 *Studies on Currency Union and Economic Growth* to distinctly accommodate studies that relating to the impact of common currency adoption on economic growth, on pages 15-17.

4. Finally, the survey misses any systematic consideration of measurement, data and methodological issues, which are instead crucial to better understand the underlying differences in results.

Responses:
We added discussions on the measurement of integration, data and methodologies employed by the empirical studies surveyed as follows on pages 29-30:
"Methodologically, the review shows that previous studies employed diverse econometric methods to determine the integration-growth nexus such as Ordinary Least Squares (OLS) Fixed Effect (FE), Instrumental Variables (IV), General Method of Moments (GMM) techniques, etc. The modelling frameworks include dynamic growth model within linear or non-linear frameworks. Arguably, the nexus between integration and economic growth could be sensitive to the methodology employed, and this could partly account for the differences in the findings.

Regarding measurement, different proxies have been employed in past empirical studies to measure economic integration. For instance, some studies constructed an economic integration index based on the level of tariffs and regional cooperation (e.g. Kamau, 2010), while others (e.g. Mann, 2015) measured European integration as trade with other EU members as a proportion of total trade. Moreover, some studies used binary variable (which is unity for countries that join economic integration or use the same currency, and zero otherwise) to measure economic integration or union (e.g. Anyanwu, 2003; Kalaitzoglou & Durgheu, 2016). As for financial integration, the most extensively applied measurements in the literature are indicators of capital market liberalization (*de facto* and *de jure* indicators), while indicators of equity market and banking sector liberalization are less extensively used. Specifically, the *de facto* indicators measure the actual openness of financial market transactions expressed as stocks or flow ratios of assets and liabilities, or the sum of both, in percentage of GDP. Conversely, the *de jure* indicators refer to the legal status of the financial liberalization process which are typically based on information from the IMF's Annual Report on Exchange Arrangement and Exchange Restrictions (AREAER) and use diverse scoring methods (see Chin & Ito, 2006; Gehringer, 2013, 2014). Each of these measurements has its merits and demerits, hence, there seems to be no consensus in literature regarding the best measurement of economic or financial integration.

In terms of the data, most of the previous studies on economic integration were conducted within a cross-sectional or panel data analysis, while others used 5- or 4-year non-overlapping average data. There are some past studies on financial integration that employed time series data. Thus, the heterogeneous nature of the findings on the nexus between integration and economic growth could be attributed to differences in empirical strategies. In essence, the financial integration-growth nexus could be country-specific which underscores the limitations of generalizations from cross-country studies. Moreover, failure to account for some factors (financial, economic, policy and institutional features), reverse causation, differences in time periods used, measurement error and collinearity among the independent variables could be responsible for the differences in empirical outcomes."

Yours sincerely,

Hooi Hooi Lean