

**IMF Conditionality, Trade Structure and Economic Complexity:**

**What did Structural Adjustment Programs Really Adjust?<sup>1</sup>**

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#### **Abstract**

The conditionality requirements of the International Monetary Fund (IMF) have been a source of intense debate since the early 1980s. These conditions, which are attached to IMF lending programs, cover a variety of issues from fiscal and monetary reform to economic liberalization and institutional change. In this paper we examine the effects of IMF conditionality requirements on structural transformation in member countries through changes in skill-and-technology intensity of exports and overall economic complexity. The empirical analysis is based on data on IMF conditions and trade structure in 161 countries between 1980-2012 and take into account policy and conditionality heterogeneity across country and time. We also account for the endogeneity of selection into IMF programs, and the endogeneity of IMF conditions imposed on a country that is selected into an IMF program. The empirical results suggest that IMF programs and conditionality requirements along a spectrum of policy areas had no robust or significant effect on trade structure, economic complexity or export diversification. Overall, we find no evidence of any positive effects of IMF programs or IMF conditionality requirements on the upgrading of technology-and-skill intensity of exports.

JEL Codes: F33, F63, O14, O19, O24

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## 1. INTRODUCTION

The conditionality requirements of the International Monetary Fund (IMF) have been a source of intense debate since the early 1980s. Over the course of last four decades conditionality-induced Structural Adjustment Programs (SAP) have become a major part of standard crisis-management and post-crisis economic reform toolkit, imposed on IMF member states that are in need of IMF help (Boughton, 2012; Eichengreen and Woods, 2016; Kentikelenis et al., 2016; IMF, 2019b). According to IMF, these reforms are aimed at restoring or maintaining “balance-of-payments viability and macroeconomic stability while setting the stage for sustained, high-quality growth” (IMF, 2019a). Particularly, promoting growth has been a major goal of IMF lending since the 1990s as IMF’s mission evolved from a short-term liquidity provider to a long-term development agency (Boughton, 2012, p.196; Reinhart and Trebesch, 2016). The policy reforms in IMF programs are distributed over one or more years and are attached to IMF loans as pre-requisites. The IMF Executive Board supervises the adoption of these reforms and decides on the disbursement of IMF loans, pending a positive review by the IMF staff on their successful implementation, also called “demonstrable policy actions.”

Nevertheless, despite a wide-spread adoption of these policies, we still do not know whether these reforms actually work as empirical evidence on their effectiveness remains thin. As a litmus test, IMF measures the success of its programs according to “the frequency of successor program engagements,” which is hardly a real measure of success (IMF, 2019b, p.9). And yet, more than a quarter of IMF members have had an IMF program 50% or more of the time since they became an IMF member (Reinhart and Trebesch, 2016). Moreover, in case of program failures, or repeated program engagements, which has been quite frequent, the IMF puts almost all the blame on errors in implementation by the borrowing countries rather than the programs themselves.

A number of studies have tried addressing this deficit in evaluating IMF program effectiveness, and, for the most part, reported negative effects.<sup>1</sup> Dreher and Vaubel (2004) fail to find any effect of

IMF conditionality requirements on five key objectives, which are monetary growth, budget deficit, current account balance, international reserves, and government spending. Furthermore, while Przeworski and Vreeland (2000), Vreeland (2003), Barro and Lee (2005), Butkiewicz and Yanikkaya (2005) and Dreher (2006) report a negative relationship between IMF program participation and economic growth, Easterly (2005) finds no significant relationship. Barro and Lee (2005) also detect no significant effect of increasing IMF loan-participation on investment, inflation, government consumption, and international openness. Moreover, Dreher and Walter (2010) finds that IMF programs significantly increase the likelihood of a currency crisis. IMF programs are also shown to cause income redistribution from labor to capital and increase within-country income inequality (Vreeland, 2003; Forster et al., 2019). There is also evidence of increasing social conflicts, weakening democracy and rule of law, and higher probability of military coups after IMF interventions (Przeworski and Vreeland, 2000; Barro and Lee, 2005; Abouharb and Cingranelli, 2007; Casper, 2017). Furthermore, IMF programs are often accused of having an ideological bias in their design, aiming at dismantling developmentalist state capacity in an effort to limit public sector interventions in the market (Przeworski and Vreeland, 2000; Vreeland, 2003; Chang, 2006; Grabel, 2011; Boughton, 2012; Eichengreen and Woods, 2016; Kentikelenis et al., 2016; Babb and Kentikelenis, 2018).

No study, however, has yet examined the effects of IMF programs on structural determinants of long run development and growth. Particularly, while a series of papers have emphasized the negative effects of IMF programs on policy space and retreat of public sector through deregulation, liberalization and privatization, we know little about how IMF reforms affect structural transformation through changes in skill-and-technology intensity of exports. But why should we care about trade structure? Economic development is about structural change whereby countries move away from agriculture and primary products to more advanced manufacturing and high value-added services. Furthermore, what you export matters for long run development, which is a dynamic process

reinforced by reallocating resources towards manufacturing sectors that enjoy increasing returns. The pioneers of development economics heavily emphasized this transformation and its role in long run development and growth (Rosenstein-Rodan, 1943; Prebisch, 1950; Hirschman, 1958; Myrdal, 1957; Kaldor, 1966). Recent studies confirm the insights of the pioneers of development economics, showing that increasing product sophistication and economic complexity through higher technology-and-skill intensities are the main drivers of structural change and long-run growth (Amsden, 1989; Lall, 2000, 2001; Imbs and Wacziarg, 2003; An and Iyigun, 2004; Hausman et al., 2007; Hidalgo et al., 2007; Hidalgo and Hausmann, 2009; Cadot et al., 2011; Bustos et al., 2012; Tacchella et al., 2012; Cristelli, et al., 2015). Exports that are more technology-and-skill-intensive, for example, have stronger productivity and growth effects than lower technology-and-skill-intensive ones as they facilitate faster physical and human capital accumulation and technological advancement. Endogenous growth and spillover effects are also the highest in the production of higher-skill manufactures, allowing greater scope for dynamic gains. Thus, economic growth and the catching-up process goes hand in hand with export diversification and increasing technology and skill intensity of exports.

What role does IMF play in this structural change? The advocates of the IMF interventions point out various developmental benefits of IMF-induced reforms, including structural, institutional, fiscal, monetary and external account reforms and economic liberalization in trade, finance, and labor markets. Exchange rate reforms, for example, aim at removing exchange rate misalignment and risk and therefore can help increase competitiveness of manufacturing industries, and move resources from nontradable goods, thereby increasing the skill content of exports. These reforms can also improve the entry and survival rates of exporters. Likewise, liberalizing international trade and investment helps correct price distortions, increase efficiency and productivity through competition, and thus contribute to increasing skill-and-technology intensity of exports. Financial sector reforms can help financial sector development, credit market deepening, and increase credit to private sector,

all of which can facilitate the development of more skill intensive and value-added industries with higher external finance needs (Levchenko, 2007; Feenstra et al., 2013; Sheng and Yang, 2016). Likewise, Central Bank reforms can increase the Bank's independence and reduce inflation and monetary policy uncertainty. Limiting public sector interventions through privatization of SOEs, streamlining government bureaucracy, and reducing budget deficits can increase efficiency and competition while preventing crowding out, all of which can increase growth and encourage development of more competitive and higher value-added industries. Institutional reforms can improve the rule of law, transparency, and bureaucratic quality, allowing the growth of higher value-added sectors, technology-and-skills upgrading and introduction of new products (Acemoglu et al., 2007; Levchenko, 2007; Feenstra et al., 2013; Sheng and Yang, 2016).

However, for the most part, these predictions remain empirically untested. IMF's own evaluations of the economic effects of these reforms hardly talk about long run structural change and instead focus on current account balance, or growth of trade volumes (IMF, 2019b). This is surprising given recent advances in development economics and new trade theory, which emphasize the importance of building rather than inheriting dynamic comparative advantage in high value-added sectors (Imbs and Wacziarg, 2003; Cadot et al., 2011). In other words, export-growth and export-led growth are not one and the same thing.

In this paper our contributions are four folds. First, we explore the effect of IMF program participation and IMF conditionality requirements on the technology-and-skill intensity of exports. Second, we examine the importance of country heterogeneity as revealed in the diversity of composition of exports as well as the content and coverage of IMF conditions. Third, unlike previous studies, which mostly relied on binomial dummy variables, we capture policy and conditionality heterogeneity across country and time using a new dataset by Kentikelenis et al. (2016), which provides information on conditionality requirements along a spectrum of areas across country and time. Fourth,

in our estimation methodology, we account for the endogeneity of selection into IMF programs, and the endogeneity of IMF conditions imposed on a country that is selected into an IMF program. While the literature differs as to the degree the conditions are imposed by the IMF or are requested by the country in question, there is strong evidence that both are endogenously determined. Our empirical analysis is based on data on IMF conditions and trade structure in 161 countries between 1980-2012. In the estimation, we use a joint estimation method and employ instrumental variables to tackle the endogeneity of IMF program participation and IMF conditionality requirements. The empirical results suggest that IMF programs and conditionality requirements along a spectrum of policy areas had no robust or significant effect on trade structure, economic complexity or export diversification. Overall, we find no evidence of any positive effects on the upgrading of technology-and-skill intensity of exports. These results are robust to a rich battery of robustness tests.

The rest of the paper is organized as follows: The next section presents a brief discussion of IMF conditionality requirements. Section 3 discusses the data and the empirical methodology. Section 4 provides the results while section 5 presents sensitivity analysis. Section 6 concludes and offers suggestions for future research.

## **2. CHANGING NATURE OF IMF CONDITIONS**

The IMF was established at Bretton Woods in 1944 and was tasked to ensure global financial stability. Article 1 of IMF states the purposes of the Fund as “international monetary cooperation,” “expansion and balanced growth of international trade”, “promotion and maintenance of high levels of employment and real income”, “development of productive resources,” “exchange stability,” and “shorten the duration and lessen the degree of disequilibrium in the international balances of payments of members” (IMF, 2019c). To achieve these goals, IMF has a variety of tools at its disposal, including lending, which is intended to give a “breathing room” to implement adjustment policies and comes with conditions that are designed to target structural problems in borrowing countries (IMF, 2019d).

Particularly, before the IMF provides funding to a member state, its government needs to make commitments to implement certain policy actions, also known as policy conditionality, which are “an integral part of IMF lending” (IMF, 2019d). These policy actions cover a wide variety of areas such as public balances, external accounts, SOEs, institutional problems, and monetary policy. The goal, according to the IMF, is to increase financial stability and provide a more growth and investment conducive economic environment.

We summarize different categories of IMF conditions in Table 1. The policy conditions take two forms, quantitative and structural (Boughton, 2012; Kentikelenis et al. 2016, 2017). Quantitative conditions, which make up a majority of conditions, are divided into two groups, qualitative performance criteria and indicative benchmarks. These are measurable benchmarks that relate to macroeconomic variables such as monetary and credit aggregates, fiscal balances, external borrowing or international reserves. Structural conditions are wider in scope and aim at changing the structure of the economy and focus on microeconomic foundations based on a neoclassical framework, including policies such as privatization of public enterprises, elimination of price controls, labor market deregulation, and tax reform. Structural conditions include prior actions, structural performance criteria and structural benchmarks. Kentikelenis et al. (2016) divides IMF conditions into 12 non-overlapping areas, covering issues from privatization to institutional reforms (Table 1). The IMF loans are distributed over multiple installments and are conditional on the successful implementation of policy actions as deemed necessary by the Fund, thus allowing considerable leverage to IMF over borrowing countries to make sure that the policy actions are fully implemented.

**<Insert Table 1 Here>**

Since 1980s, the IMF conditions have increasingly become more complex and wider in scope, covering a wider range of issues that are assumed to be important for financial stability and long run growth, including governance, social policy, institutional reform, Central Bank policy, fiscal issues,



trade and foreign exchange systems, labor markets, gender equality, and public enterprises (Chang, 2006; Boughton, 2012; Kentikelenis et al., 2016; Eichengreen and Woods, 2016; Reinhart and Trebesch, 2016; Stubbs et al., 2016; IMF, 2019b). Furthermore, IMF also expanded the use of four techniques in its conditionality toolkit (Boughton, 2012, pp. 194-195). First, it complemented its “quantitative performance criteria” with a growing number of “structural performance criteria” such as limits on public sector borrowing. Second, it steadily added more “structural benchmarks” to its arrangements. Third, the IMF made an increasing use of “prior actions,” which included policy actions borrowing countries needed to undertake before an IMF program is considered by the Executive Board. Fourth, the IMF expanded the scope of its program reviews. We can see this transformation in IMF conditionality in Figure 1, which shows the annual averages in five categories of IMF conditions, Quantitative benchmark criteria (QPCs), Indicative benchmarks (IBs), Prior Actions (PAs), Structural Performance Criteria (SPCs), and Structural Benchmarks (SBs).

**<Insert Figure 1 Here>**

Take, for example, SOE reform conditions, which reflect the IMF’s policy stance towards public sector involvement in the production and distribution of goods and services. According to the IMF, the SOEs are inherently inefficient, suffer from mismanagement, corruption and rent seeking and therefore need to be downsized and privatized. Consequently, a majority of countries under IMF programs have privatized or liquidated their SOEs (Brune et al., 2004). The IMF programs also require significant changes in financial sector, including financial institutions and the Central Bank. Trade liberalization, capital account opening, and a flexible exchange regime are also among other major reforms. The IMF conditions also cover institutional reform to make the country more business friendly. While there is no consensus in theoretical or empirical research regarding the desirability or effectiveness of most of these reforms, IMF programs have been pushing for them since the 1980s (Rodrik, 2006; Rodrik and Subramanian, 2009; Ostry et al., 2016).

Since 1980 the number of IMF conditions imposed on borrowing countries increased from an average of 12, or a total of 412, in 62 countries to an average of 39, or a total of 1,356, in 37 countries in 2014 (Figure 2). The peak total was 2,983 conditions in 73 countries in 1996. We should also note that the number of conditions varied greatly across countries with the standard deviation increasing from 6 in 1980 to as high as 26 conditions in 1999, before falling to 20 in 2014. The highest number of conditions imposed on any country was Ukraine in 1999 with 148 conditions followed by Russian Federation with 143 conditions imposed in 1998. Figure 3 shows the percentage share of top four policy reform areas under IMF programs. Between 1980 and 2014, Debt (DEB) with 31%, Finance (FIN) with 28%, Fiscal policy (FP) with 16%, and external accounts (EXT) with 9% received most of the 58,406 conditions imposed on countries under IMF programs. We also see some changing trends where the importance of conditions on Debt and Finance has declined while that of Fiscal policy has increased.

**<Insert Figure 2 & 3 Here>**

These reforms are expected to facilitate the “promotion and maintenance of high levels of employment and real income” and “development of productive resources” through a variety of channels. The IMF’s own reviews of program design and conditionality emphasizes the following six indicators as signals for sustainable growth: current account balance, including growth of exports and imports; international reserves, growth, fiscal balance, public debt and market access, and the stock of non-performing loans (IMF, 2019b). However, none of these six indicators directly relate to any determinants of long-run development and growth. They might be important for short term financial stability and balance of payments constraints, but how about the effects on long run structural change and development of productive resources? In this paper we are interested in one channel that can affect long run growth and economic development, which is the trade structure.

### 3. EMPIRICAL ANALYSIS

We examine the effects of IMF conditionality requirements on trade structure in a simultaneous equation framework in Equations (1)-(3), which allows us to account for the endogeneity of IMF program participation and IMF conditionality (Stubbs et al., 2020).

$$\widehat{IMFProg}_{it-1} = \alpha_1 X_{it-1} + \alpha_2 Z_{it-1} + \mu_i + \delta_t \quad (1)$$

$$\widehat{IMFCOND}_{it-1} = \gamma_1 X_{it-1} + \gamma_2 Y_{it-1} + \mu_i + \delta_t \quad (2)$$

$$Intensity_{it} = \beta_1 \widehat{IMFProg}_{it-1} + \beta_2 \widehat{IMFCOND}_{it-1} + \beta_3 V_{it-1} + \mu_i + \delta_t + \varepsilon_{it} \quad (3)$$

where  $i$  is country and  $t$  is year (1980-2014).  $\widehat{IMFProg}_{it}$  is the fitted values from Eq. (1) for IMF participation of country  $i$  at time  $t$ ;  $\widehat{IMFCOND}_{it}$  is the fitted values for the number of conditions imposed on country  $i$  at time  $t$ ;  $Intensity$  is the skill-and-technology intensity of exports, measured between one and five with the latter representing higher levels of export sophistication. Eq. (3) is the outcome equation.  $X_{it}$  and  $V_{it}$  are vectors of control variables that are discussed below;  $Z_{it}$  and  $Y_{it}$  are excludable instruments.  $\mu_i$  and  $\delta_t$  are country and year fixed effects to control for unobserved country specific, and time specific factors that affect IMF program participation, IMF conditions, and export sophistication. The final term,  $\varepsilon_{it}$ , represents the error term. All control variables are lagged by one period to reduce the likelihood of contemporaneous correlation and to account for their delayed effects. Eqs. (1)-(2) accounts for the endogeneity of selection into IMF programs, and the endogeneity of IMF conditions imposed on a country that is selected into the IMF program. While the academic literature differs as to the degree the conditions are imposed by the IMF or are requested by the country in question, there is strong evidence that both are endogenously determined.

$IMFProg$  is a dummy variable, which is equal to 1 if country  $i$  has an existing IMF program in place for at least 5 months in a given year (Dreher, 2006). It controls for the endogeneity of being selected into an IMF program.

*IMFCond* is a vector of total number of IMF conditions imposed on country  $i$ . Unlike previous studies, which mostly relied on binomial dummy variables, we capture policy and conditionality heterogeneity across country and time using a new dataset, which provides information for conditionality requirements along a spectrum of areas across country and time for all IMF members between 1980-2014 (Kentikelenis et al., 2016). In the benchmark analysis we use a compositive variable, counting the number of binding conditions (i.e. hard conditions) under an IMF program. The binding conditions are central to the conditionality requirements and structural adjustment policies under an IMF programs and their successful implementation is a pre-requisite for the release of future disbursements of IMF loans. Thus, they are binding for the continuation of IMF programs in any country. In contrast, soft or non-binding conditions do not have the same degree of enforcement, and their lack of implementation do not automatically cause suspension of an IMF loan (Stubbs et al., 2020). We include both structural and quantitative conditions in our benchmark conditionality variable. In the robustness analysis we then breakdown this variable into its components to examine any differential effects of policy conditions in each of those areas.

*Intensity<sub>jt</sub>* is the technology-and-skill intensity measure, calculated as the (log) weighted average of the percentage share of each group of exports in total exports of  $i$  at time  $t$ . The product types include high-skill manufactures (5), medium-skill manufactures (4), low-skill manufactures (3), resource-intensive manufactures (2), and primary goods (1), with values in parenthesis representing the multipliers assigned to each product category. For example, the share of these products in the export basket of Mexico to Germany in 2010 were as follows: 23.72% for high skill, 62.56 for medium-skill, 3.89% for low-skill, 5.47 for resource-intensive, and 2.76% for primary goods, yielding a weighted skill-intensity value of 3.94.

$X$  is a vector of country and time variant factors, including the following:

*RGDPG* is the (log) real GDP growth and controls for the effect of economic growth on the

probability of signing an IMF agreement and having conditionalities imposed on IMF lending. Economic growth slowdowns and recessions are significant predictors of a country signing an IMF agreement.

*RGDPPC* is real GDP per capita (chained PPPs in mil. 2011US\$) from PWT 9.1 (Feenstra et al., 2015). It controls for the effect of incomes and economic development on IMF program participation and conditions. We expect exporter income to have a negative effect on the probability of signing an IMF agreement and also on the number of conditions imposed. As income levels are highly correlated with political power, and also share in IMF quotas (which determine countries' voting power in the Fund), we expect higher income countries to have a lower likelihood to borrow from the IMF, and when they do have more lenient conditions.

*CA* is the current account balance as a percentage of GDP (WB, 2019). Current account imbalances signal balance of payments problems and increase the likelihood of signing an IMF agreement and the number of conditions imposed.

*Fiscal* is the (log) percentage share of general government final expenditures in GDP. Fiscal imbalances affect both the likelihood of IMF agreements and also the number of conditions imposed as a part of an IMF agreement.

*Inflation* is consumer inflation. Increasing inflation rates signal the signing of IMF agreements and also the number of conditions.

Previous research also highlights the importance of political affiliation between IMF members and its main shareholders. Particularly, the national interests of the U.S. arguably play a major role in IMF's decisions to extend a loan to a member state (Stone, 2004; Dreher et al., 2009a, 2009b; Eichengreen and Woods, 2016). Striking examples are the IMF's involvements in the 1994 Mexican crisis and the 2001 Turkish crisis, where the IMF extended unprecedented bailout loans, reaching 688% of Mexico's and 1,647% of Turkey's IMF quota (Krueger, 1998; IMF, 2019e). To account for

this, we include two variables that control for the effect of relationship with the largest IMF quota holder, the US, and also other main economic and political power centers (Dreher et al., 2009a, 2009b). *PctAgreeUS* is Lijphart's index of agreement between a UN member state and the U.S. (Bailey et al., 2017). It is equal to 1 if a state always agrees with the U.S, 0 if it always votes the other way. If one state votes yes and the other abstains, the vote is coded as 0.5. *UNSC* is a dummy variable equaling one when a country is a temporary member in the United Nations Security Council (Dreher et al., 2009b). We expect both variables to have a positive effect on the likelihood of a country being admitted to an IMF program, and a negative effect on the stringency of IMF conditions as reflected by fewer number of policy conditions imposed.

$V$  includes an additional set of control variables that are expected to affect the level of technology-and-skill intensity of a country's exports, including the following:

*RGDPPC* is real GDP per capita (chained PPPs in mil. 2011US\$) from PWT 9.1 (Feenstra et al., 2015). It controls for the effect of income and economic development on export sophistication. We expect exporter incomes to have a positive effect on skill intensity of exports as income levels reflect differences in endowments, productivity and productive capacity, technology and institutional development. It is possible that countries that apply for IMF programs are also lower income and export lower skill intensive goods (i.e. lower Intensity level).

*GFCFY* is the percentage share of gross fixed capital formation in GDP and controls for the effect of capital accumulation on the technology-and-skill intensity of a country's exports. We expect a positive relationship as fixed investment is a robust predictor of export upgrading.

*Pop* is the (log) level of total population. We expect population size to have a positive effect as it allows larger scale effects and domestic market both for production and labor force supply.

*HC* is a human capital index from PWT9.1. Countries with higher human capital are expected to have more sophisticated and skill intensive production processes, increasing export complexity.

*Openness* is trade openness, measured by the (log) percentage share of exports and imports in GDP and helps control for the effect of trade openness on trade structure.

*Credit* is domestic credit provided by the financial sector as a percentage share of GDP. It controls for the availability of external credit, which affects the complexity of production processes and the specialization patterns according to comparative advantage.

*RER* is the (weighted) annual average of monthly bilateral real exchange rates (an increase is a real depreciation) between country *i* and all its trading partners. Weights correspond to trade shares in country *i*'s exports. Increasing *RER* can increase profitability of traded goods sectors and facilitate faster industrialization and industrial upgrading through the development channel (Rodrik, 2008).

We also include one additional variable in separate regressions, *ICRG*, which is a composite measure of institutional development from the International Country Risk Guide. It is the sum of institutional development in 12 subcategories, including government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religious tensions, law and order, ethnic tensions, democratic accountability, and bureaucracy quality. *ICRG* ranges from 0 to 100, with higher scores representing better institutional development. Because institutional development is shown to be a major source of comparative advantage, allowing production of more sophisticated, higher value-added and skill-and-technology intensive goods, we expect it to have a positive effect on *Intensity* (Levchenko, 2007). However, because IMF conditions include institutional reforms, the estimated effect can be biased downwards.

Following Stubbs et al. (2020), we estimate the system of three simultaneous equations using the maximum likelihood estimator, which linearizes the IMF participation equation and corrects for

the endogeneity of IMF program participation and the conditionality requirements.<sup>2</sup> For robustness, we also report results using the OLS and a conditional mixed process maximum-likelihood estimator, which corrects for the endogeneity of Eq (1) and (2) but does not linearize the IMF program participation equation (1), thus leaving out country fixed effects in the first stage regression.

In estimating Eq. (1)-(3), the biggest challenge is to find instruments that are correlated with the number of IMF conditions and the participation in the IMF program but not the variable of interest, export structure. Following Stubbs et al. (2020), and building on the aid effectiveness literature, we use a compound instrumentation approach. The compound instrumental variable we use to account for the endogeneity of IMF program participation ( $Z$ ) is the interaction of the cross-sectional variation in the within-country average of IMF participation and IMF's budget constraint in year  $t$ . The IMF budget constraint is equal to (log) liquid resources of the IMF (i.e. usable currencies plus Special Drawing Rights contributed) divided by liquid liabilities (total of members' reserve tranche positions plus outstanding IMF borrowing from members).<sup>3</sup> The second compound instrumental variable,  $Y$ , accounts for the endogeneity of IMF conditionality and is measured by an interaction term between the cross sectional variation in the within-country average number of conditionality requirements imposed on a country and IMF budget constraint in year  $t$ . Both compound instruments are from Stubbs et al. (2020) and are inspired from the aid effectiveness literature (Nunn and Qian, 2014; Dreher and Langlotz, 2017).

For both IVs, we assume that changes in IMF budget constraint affect the incidence of IMF participation and the number of IMF policy conditions similarly across countries. As is discussed extensively in Stubbs et al. (2016), the interaction of an endogenous variable with an exogenous one can be considered as being exogenous. Furthermore, it has been shown that increasing country demand for IMF loans has a positive effect on the number of conditions demanded in exchange for loans, reflecting the effect of IMF's budget constraint on its resource allocation (Dreher and Vaubel,



2004; Lang, 2016). Stubbs et al. (2020) provide further evidence showing that these two variables serve as strong IVs for both Eq. (1) and (2), and that we can take the IMF budget constraint as exogenous.

### 3.1 Data

The data on IMF conditionality is from Kentikelenis et al. (2016, 2017). As summarized in Table 1, IMF conditions are either *quantitative* or *structural*. Based on the quantitative vs. structural conditions duality, there are five types of conditions imposed on borrowing countries, which are Quantitative Performance Criteria, Indicative Benchmarks, Prior Actions, Structural Performance Criteria, and Structural Benchmarks. Kentikelenis et al. (2017) separates conditions into 13 mutually exclusive and non-overlapping policy areas including: fiscal issues, revenue and tax issues, financial sector, monetary policy and Central Bank issues, SOE (State Owned Enterprise) reform and pricing, SOE privatization, external debt issues, labor issues, social policy; redistributive policies; institutional reforms; land and environment; and a residual category. In our benchmark analysis, we have used the total number of conditions attached to each of these areas in each country in each year and adopted this composite indicator, called the “Burden of Adjustment Indicators” (BAs), to measure the degree of “hard” and “soft” conditions imposed on each country that is adopting the IMF programs.<sup>4</sup> We use BA2 in our benchmark estimates as it includes only hard conditions, which received the most emphasis from the IMF and their implementation is a must for concluding a review and to release disbursements of loans. In case they are not implemented, a waiver is needed from the Executive Board of the IMF. In contrast, soft conditions are not as restrictive, and no waiver is necessary when they are not met (Kentikelenis et al., 2017). Thus, the composite variable BA2 allows us to focus on binding conditions from non-binding ones and examine whether they affect the trade structure. Our measure includes both quantitative and structural conditions, containing specific quantitative policy targets (i.e. level of external public debt) as well as structural reforms (i.e. privatization). Later in the robustness analysis, we use alternative measures of IMF conditionality, including two other measures of BAs, that are

implementation corrected and implementation discounted, which capture different dimensions of conditionality depending on the aggregation method. We also examine quantitative and structural separately together with a disaggregated measure of BA into its subcomponents,

The trade data are from the Observatory of Economic Complexity (2019), which is based on UN COMTRADE. We include bilateral trade flows between 172 countries at 4-digit level (SITC4 Rev.2) for the period 1980-2012. To measure the skill-content of exports, we use Lall (2000) and classify exports according to their technology-and-skill-intensity into five categories: high-skill manufactures (*high-skill*), medium-skill manufactures (*medium-skill*), low-skill manufactures (*low-skill*), resource-intensive manufactures (*resource-intense*), and primary products (*primary*). In this setting, turbines, for example, are classified as high-skill while chemicals and clothing are classified as medium and low-skill, respectively. Petroleum products are included in the resource-intensive manufactures and crude petroleum is included in the primary products. The full list of product classification is in the Appendix. Figure 4 shows the (log) level of average *Intensity* for the full sample, for Emerging South and the Rest of South between 1980 and 2012.<sup>5</sup> We observe that while average export Intensity increased significantly, it is the most pronounced for Emerging South countries and not so much for the Rest of South countries. We also see observe a high variation in the degree of average export skill intensity with a standard deviation of 0.14 across countries.

The data on GDP per capita and human capital are from PWT9, population and credit to GDP ratio are from the World Bank's World Development Indicators (2018). Openness is from the Observatory of Economic Complexity (2019), calculated by the summation of bilateral trade flows used in the calculation of Intensity measure. The information on institutional development is from ICRG, and real effective exchange rate is from the IMF's IFS.

Table 2 shows the summary statistics of the variables used in the regression analysis. 70% of the sample observations recorded no IMF programs, and 116 countries did not have any IMF

programs during the sample period. And yet, 131 countries recorded at least one IMF program, and the highest (cumulative) number of conditionalities imposed is found in Romania (1,177 conditions), Pakistan (1,094 conditions) and Mauritania (1,078 conditions).

<Insert Table 2 Here>

#### 4. EMPIRICAL RESULTS

We present regression results in columns (1)-(6) of Table 2. Column (1) show results from a simple OLS regression without the presence of an IMF program and IMF conditions, which are added in column (2). Here we detect a negative and statistically significant effect of IMF program participation (at 5% level) but a positive effect of IMF conditionality requirements (at 10% level) on trade structure. Column (3) is our benchmark regression from the MLE estimation of Eqs. (1)-(3) in a simultaneous equation framework. As discussed earlier, we address the issues of endogeneity of IMF program participation and conditionality requirements using an IV approach with compound instruments. We continue to find a negative and significant effect of IMF program participation (at 5% level) but do not detect any significant effect of IMF conditions.

In column (4) we add additional control variables. In the *Intensity* equation we include an aggregate measure of institutional development, the International Country Risk Guide index (ICRG), which is a composite variable of institutional development in 12 subcategories, including government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religious tensions, law and order, ethnic tensions, democratic accountability, and bureaucracy quality. *ICRG* ranges from 0 to 100, with higher scores representing better institutional development. We expect institutional development to affect skill intensity of exports as it is shown to be a major source of comparative advantage, affecting the complexity of production processes, directing countries to specialize in more institutionally dependent and higher value added sectors (Levchenko, 2007).<sup>6</sup> Next, in the IMF program participation and conditions equations, we include UN

Security Council temporary membership (*UNSC*) and *Pct.AgreeUS* which is Lijphart's index of agreement between a UN member state and the U.S. (Bailey et al., 2017). As discussed earlier, both variables can affect both IMF program participation and the intensity of IMG conditions. Third, we include *ICRG* in the IMF conditions equation to control for the effect of institutional development on the number of IMF conditions. Arguably, countries that already have good institutions would receive fewer number of conditions attached to an IMF loan. Or, such countries may simply have better institutional bargaining mechanisms in their dealings with the IMF, decreasing the number of conditions imposed upon them. The results in column (4) suggest that the presence of an IMF agreement or the number of IMF conditions do not have any effect on the trade structure. While the IMF agreement variable retains its negative sign, it loses its statistical significance.

In columns (5) and (6) we report results from the same IV approach as in columns (3)-(4) but also employ a control function approach to deal with the issue of endogeneity of IMF program participation. While estimating we continue to use the same set of compound instruments in the first stage for IMF participation and number of conditions equations. However, we drop country fixed effects from the participation equation because of the incidental parameter problem. Similar to column (4), column (6) introduces additional control variables for both first and second stage equations. The coefficient estimates in columns (5) and (6) are quite similar to those before, showing no significant effect of either IMF program participation or the number of conditions imposed under those programs.

As for other variables of interest, we find that fixed investment as a share of GDP is a robust predictor of technology and skill intensity of exports. This finding is consistent with literature on the effects of investment on moving up the product sophistication ladder. We find similarly positive and consistent results for the human capital variable. This finding is consistent with the endogenous growth literature where human capital plays a significant role in structural change. Likewise, trade

openness appears to have a significantly positive effect across every specification, highlighting the importance of exposure to competition and scale effects. Consistent with the work on the importance of external credit availability for long run growth and trade structure, we find that credit to GDP ratio is a robust predictor of changes in trade intensity variable. Other variables, including real GDP per capita, total population, real effective exchange rates and institutional development, however, appear with statistically insignificant effects. We can also see our compound instruments remain valid even after using UN security council membership and the UN general assembly vote as additional instruments in both IMF program and IMF conditions equations in columns (4) and (6).

The standard diagnostic statistics confirm our identification strategy and support our choice of instruments. The Kleibergen-Paap F-statistics is 20.35 for the conditionality compound instrument and 25.02 for the participation compound instrument in our benchmark regression of column (3). Both instruments are also jointly significant, with an F-statistics of 6.42. They are quite similar in columns (4)-(6).<sup>7</sup>

#### **4.1 Addressing heterogeneity of IMF conditionality requirements**

IMF conditions come in all shapes and sizes and there is high heterogeneity in terms of the number as well the type of conditions imposed. Thus, we repeat our regression analysis using other measures of IMF conditions. Results from first stage regressions are again available in the online Appendix.

In column (1) we include replace *BA2TOT* with *BA1TOT*, which includes both soft (not-binding) and hard (binding) conditions in its total count. Column (3) adds *BA3TOT*, which is a weighted count version of *BA1TOT* and *BA2TOT* where hard conditions are assigned a weight of 2 and soft conditions are assigned a weight of 1.

In columns (4)-(6) we use implementation corrected versions of IMF conditionality requirements. While our main control variable counts only binding conditions, in some instances IMF's Executive Board can waive certain conditions for certain countries without a program

suspension. Thus, in column (3) we use  $dBATOT$ , which is an implementation-corrected hard condition count where waived conditions are subtracted from total hard conditions.<sup>8</sup> In column (4), we use  $dBATOT$ , which is implementation-discounted simple condition count. In calculating  $dBATOT$ , the number of conditions in a given year is discounted by the number of quarters interrupted in a given year within an IMF program. Program interruptions often result from a country's failure to complete an IMF review. In column (5) we have  $dBATOT$ , which is implementation-discounted hard condition count. Column (6) includes  $dBATOT$ , which is implementation-discounted weighted condition count (as before, hard conditions are assigned a weight of 2 and soft conditions are assigned a weight of 1). For space considerations we report results using only our benchmark specification, column (3), from Table 2 but report the rest in the Appendix. We should also note that because data for waivers are not available after 2008, our sample size is reduced.

Overall, across every specification in columns (1)-(6) IMF programs are associated with a significantly negative effect on our *intensity* variable with quite close coefficient estimates. Furthermore, once we correct for implementation in columns (4)-(6), the IMF conditionality requirements now become positive and significant at the 5% and 10% levels. However, the estimated effects are quite small, and become insignificant in columns (2) and (3).

Next, in Table 5 we separate IMF conditions into quantitative conditions and structural conditions. The quantitative conditions include total quantitative conditions (QCs), quantitative performance criteria (QPCs) and indicative benchmarks (IBs). Likewise, structural conditions include total structural conditions (SCs), prior actions (PAs), structural performance criteria (SPCs), and structural benchmarks (SBs). We discussed each type of conditions in Table 1 before.

**<Insert Table 5 Here>**

The results in Table 5 reveal that IMF programs have a negative effect on trade structure, albeit with differing statistical significance levels in columns (1)-(7). The effect is significant at 5% level in columns (1) and (2), and at 10% level in columns (3), (4) and (6). Overall, these are weakly significant at best and are not robust results. Likewise, IMF conditionality requirements do not appear to have a significant effect on trade structure, even though the estimated relationship is a positive one.

In order to make sure that our results are not driven by IMF conditionality heterogeneity we examine each of 12 IMF conditionality groups separately. This exercise also allows us to test whether some conditions were more effective in stimulating structural change in trade in countries under IMF conditions. For example, institutional reforms, SOE privatization, external sector reforms, or financial sector reforms could be more influential than social policy or land and environment reforms. However, we need to make sure that left-out or residual conditions are not driving our results, causing an omitted variable bias in our estimates. Therefore, we include each of 12 groups of IMF conditions together with the residual conditions that are excluded in each policy area. Similar to the aggregate conditions, we create compound instruments for each policy conditions and the residuals using the interaction of the within-country average of the conditions, the residual conditions and the annual IMF budget constraint. Tables 6 and 7 presents results from this exercise.

**<Insert Table 6 & 7 Here>**

Column (1) shows the effects of structural and quantitative number of conditions, separated using an alternative disaggregation method. Briefly, the structural conditions are equal to the sum of total number of structural performance criteria (*SPCsTOT*) and prior actions (*PAsTOT*), and quantitative conditions are equal to the total number of quantitative performance criteria (*QPCsTOT*). Columns (2)-(7) include total number of (implementation uncorrected) hard conditions (*BA2*) for fiscal issues (*FP*), revenues and tax issues (*RTP*), financial sector, monetary policy and Central Bank issues (*FIN*), SOE reform and pricing (*SOE*), privatization (*PRI*), and external debt issues (*DEB*). Columns (8)-(14)

in Table 7 presents the remaining conditions for external sector (*EXT*), labor issues (*LAB*), social policy (*SP*), redistributive policies (*POV*), institutional reforms (*INS*), land and environment (*ENV*), and the residual category (*OTH*), respectively. In none of the specifications, either the IMF condition in question, or the remaining residual conditions have any significant effect on the trade structure. The only exception is column (11) for redistributive policies, which appears with a positive and significant effect. In contrast, the presence of an IMF program appears to have a negative and significant effect (at 5% level) on trade structure in all 14 specifications.

#### **4.2 Alternative definitions of export sophistication**

Are our results sensitive to the definition of skills intensity and trade structure? To examine this question, we employ three alternative definitions of technology and skill intensity of exports and exports upgrading. First, we adopt the OECD (2011) export classification as an alternative method. OECD (2011) groups manufacturing industries into four categories based on their R&D intensities: high-technology, medium high-technology, medium low-technology, and low-technology.<sup>9</sup> We classified all other products under “others,” which are mainly primary products. Aircraft and spacecraft, for example, are included in the high-technology while food products are included in the low-technology category. Once we have the products classified accordingly, we calculated the intensity index using the same methodology as before whereby it is in the range of [0, 1] with higher numbers indicating higher skill intensity.

Second, we use the Economic Complexity Index (ECI) from MIT’s Observatory of Economic Complexity (2019). The ECI measures the sophistication of a country’s productive structure by combining information on the diversity of a country’s exports (the number of products it exports), and the ubiquity of its products (the number of countries that export that product) (Hidalgo & Hausmann, 2009). Assuming that ECI captures “the composition of a country’s productive output” and “the structures that emerge to hold and combine knowledge”, it can be used as a proxy for the productive capabilities of a given country (Observatory of Economic Complexity, 2019). The intuition



behind ECI is that sophisticated economies are diverse and export products that, on average, have low ubiquity, because only a few diverse countries can make these sophisticated products. By the same token, less sophisticated economies are expected to produce a few ubiquitous products. ECI exploits this variation in the diversity of countries and the ubiquity of products to create a measure of a country's productive structure that incorporates information about the sophistication of products. ECI is calculated from exports data connecting countries to the products in which they have Revealed Comparative Advantages (Hidalgo and Hausmann, 2009).

Third, we use the Herfindahl concentration index for export market diversification, which is calculated using the sum of (squared) shares of a given destination in the total exports of a given country. It ranges between zero and one, with the latter representing the highest concentration where all goods are exported to only one destination. We use the IMF's direction of trade statistics for merchandise goods export values due to its broader coverage. If IMF programs and IMF conditions were conducive to skills upgrading and increased exports sophistication, we should expect countries to diversify their exports across destinations, causing a decrease in export concentration.

Table 8 shows the results from this exercise for the IMF program and IMF condition variables, replicating Table 3. Full results here and thereafter are reported in the Appendix. The correlation coefficient between *Intensity* and these three variables are 0.84 (*Intensity*<sup>OECD</sup>), 0.77 (*ECI*) and -0.07 (*Herfindahl*). The results from all three measures of export sophistication and diversification are consistent with our earlier results. First, we find no significant effect of IMF programs or IMF conditions on OECD based intensity measure or the economic complexity index. When the effect is significant, it is negative as is the case with the effect of IMF programs in columns (3) and (4). As to the export concentration, we find similar results with mostly insignificant coefficient estimates except for column (3) where we detect a negative effect of IMF program presence on export concentration.

However, this effect is not robust, or significant in any other specification, or for IMF conditionality requirements.

**<Insert Table 8 Here>**

## **5. SENSITIVITY ANALYSIS**

In this section we conduct a rich battery of sensitivity tests. First, to check for sample selection bias we exclude the former Soviet Union, Warsaw Pact countries and Yugoslavia from the sample given the unique circumstances these transition economies went through. Also, the IMF programs in these economies were heavily influenced by the politics of the end of Cold War and therefore may bias our results. Second, we repeat the analysis by dropping one World Bank geographical region (East Asia and Pacific, Europe and Central Asia, Latin America and the Caribbean, Middle East and North Africa, South Asia, and Sub-Saharan Africa) at a time to rule out the possibility that the results are affected by regional heterogeneity. Third, we dropped the top and bottom one percentiles of the sample based on the skill intensity of exports (*Intensity*). Fourth, we examined the sensitivity of our findings to the heavy users of IMF agreements by dropping those above the 99<sup>th</sup> percentile of the sample based on the average number of years a country was under an IMF program (0.848), and the average number of IMF conditions imposed per year (25.143). After these checks, which are included fully in the Appendix, all our results remained intact.

## **6. CONCLUSION**

The effects of IMF programs and the conditionality requirements contained therein as well as the determinants of country selection into these programs have been a source of intense debate for decades. While the conclusive verdict is still out there, the overall results are pessimistic as to the growth and development effects of these programs. There is also substantial evidence showing that the country selection into these programs is a function of both economic and political factors, including the geostrategic importance of a given country to the major shareholders of the IMF.

However, most studies on the subject fail to pass the internal validity test in their identification of the IMF programs and IMF conditionalities together with the outcome variable of choice. Furthermore, while a substantial number of studies have examined the effectiveness of IMF programs in stimulating growth, none has analyzed the channels through which these effects are materialized. Particularly, none has yet studied the effects of these programs on the main drivers of economic growth such as productive capabilities or technology and skill intensities. In this paper we examined the effects of IMF programs and IMF conditionality requirements on the technology and skill intensity of exports, and more broadly, on economic complexity. In other words, we explored whether IMF programs and IMF policy reforms had any effect on long run structural change and skills upgrading in member countries. This is an interesting question as the technology and skills upgrading of a country's productive capabilities is accepted as a major driver of long run development and growth. While it was not at the center of our main research question, our empirical methodology also studied the determinants of IMF program selection and conditionality requirements as well.

We examined these questions by endogenizing both country selection into an IMF program and the number of IMF conditions imposed on a country along a wide spectrum of policy areas. Particularly, rather than using a binomial variable, we used a recently developed IMF conditionality dataset by Kentikelenis et al. (2016) and separated five types of quantitative and structural IMF conditions in 13 policy areas, which allowed us to identify IMF conditionality requirements by type and policy as well as scale. In our measurement, we also accounted for binding and non-binding differentiation as well as whether or not policies were actually binding or non-binding, and whether or not they were ever waived. In the estimation stage, we employed the MLE method and used an instrumental variable approach that accounted for the endogeneity of both IMF program participation and IMF conditionality.

The answers to these questions from our empirical analysis are mostly negative. We failed to find any positive effect of IMF programs and IMF conditionality requirements on the skill intensity of exports, overall economic complexity, or export diversification. On the contrary, in a few cases the effects turned out to be negative. Our results are robust to the type of IMF conditionality requirements or the policy areas they are focused on. Furthermore, these findings are not sensitive to the type of estimation method considered. We further tested the sensitivity of our findings to a variety of sample selection issues.

The findings raise more questions about the effectiveness of IMF programs for long run development and growth. If these programs do not affect productive capabilities and economic complexity of a country, which are crucial for long run structural change, then what do they do? Why does the IMF insist on implementation of programs that are shown to be ineffective in stimulating long run growth and structural change? Why do host countries agree to spend significant amount of resources to implement policies that do not have any tangible benefits? These are some of the questions that we hope future research will provide some answers to. We should also note that our measure of IMF conditionality requirements, while a significant improvement over previous measures, is not perfect. Particularly, as is also noted by Stubbs et al (2020), the number of IMF conditions imposed on a host country does not capture the full burden of implementation as each policy area requires different types of resources and capabilities for implementation. The financial cost of implementation is also not necessarily homogenous across different policy areas. We hope future research on the subject will address these questions.

## ENDNOTES

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<sup>1</sup> As of January 28, 2020, the main research outlet of the IMF, IMF Staff Papers, or its newer version, IMF Economic Review, published less than ten papers since 1980 examining empirically any aspect of the IMF program effectiveness. Of this number, none was on structural change. We used the following keywords for search: conditionality, SAPs, structural change, IMF agreement, IMF-supported programs.

<sup>2</sup> The estimations are done in Stata 14.2 using the “cmp” command Roodman (2009).

<sup>3</sup> IMF liquidity ratio equals liquid resources (usable currencies plus Special Drawing Rights contributed) divided by liquid liabilities (total of members’ reserve tranche positions plus outstanding IMF borrowing from members) (Lang, 2016).

<sup>4</sup> The dataset allows for the separation of hard and soft conditions in a given policy area.

<sup>5</sup> Rest of South are developing countries excluding the Emerging markets. Full list of countries is in the Appendix.

<sup>6</sup> See Nunn and Trefler (2014) for a comprehensive review.

<sup>7</sup> As a general rule, we would expect the F-statistics to be greater than 10 (Staiger and Stock, 1997).

<sup>8</sup> Only hard conditions have data for waived conditions. Stone (2004) finds that enforcement of IMF conditions is subject to political influence from the US and former colonial powers in Africa. Therefore, netting out the waivers together with controlling for endogeneity and the UN security council membership and General Assembly voting behavior might help correct for this bias.

<sup>9</sup> The Appendix provides further details on the OECD (2011) index.

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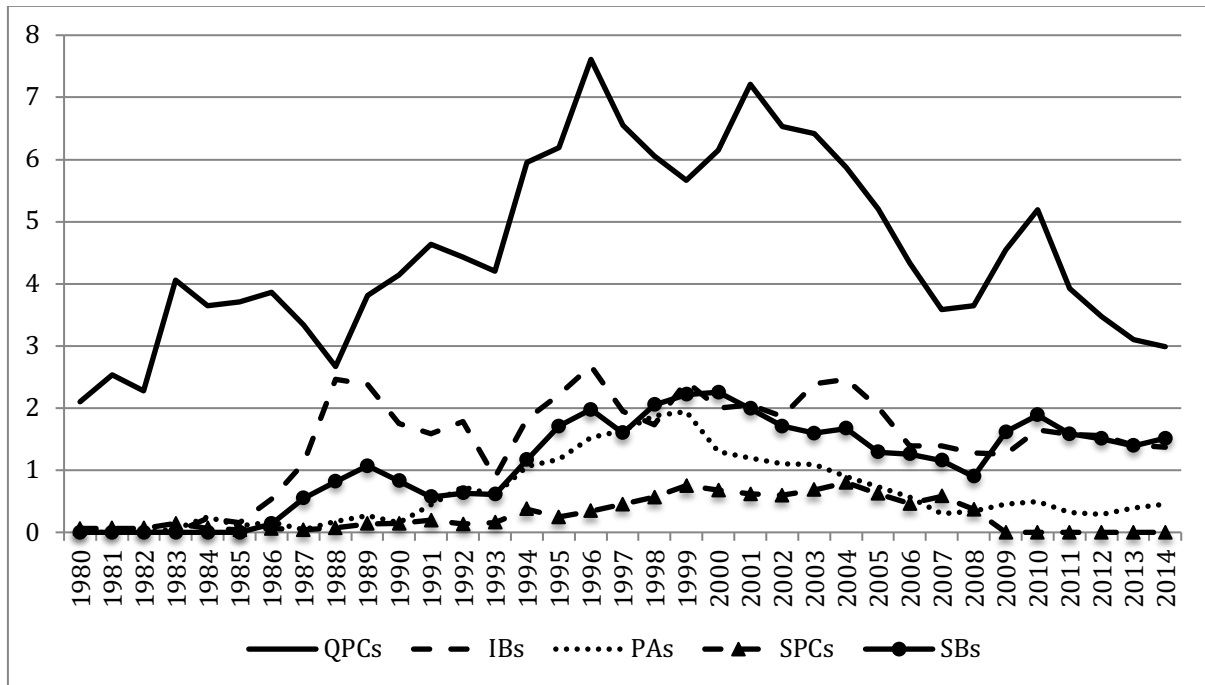
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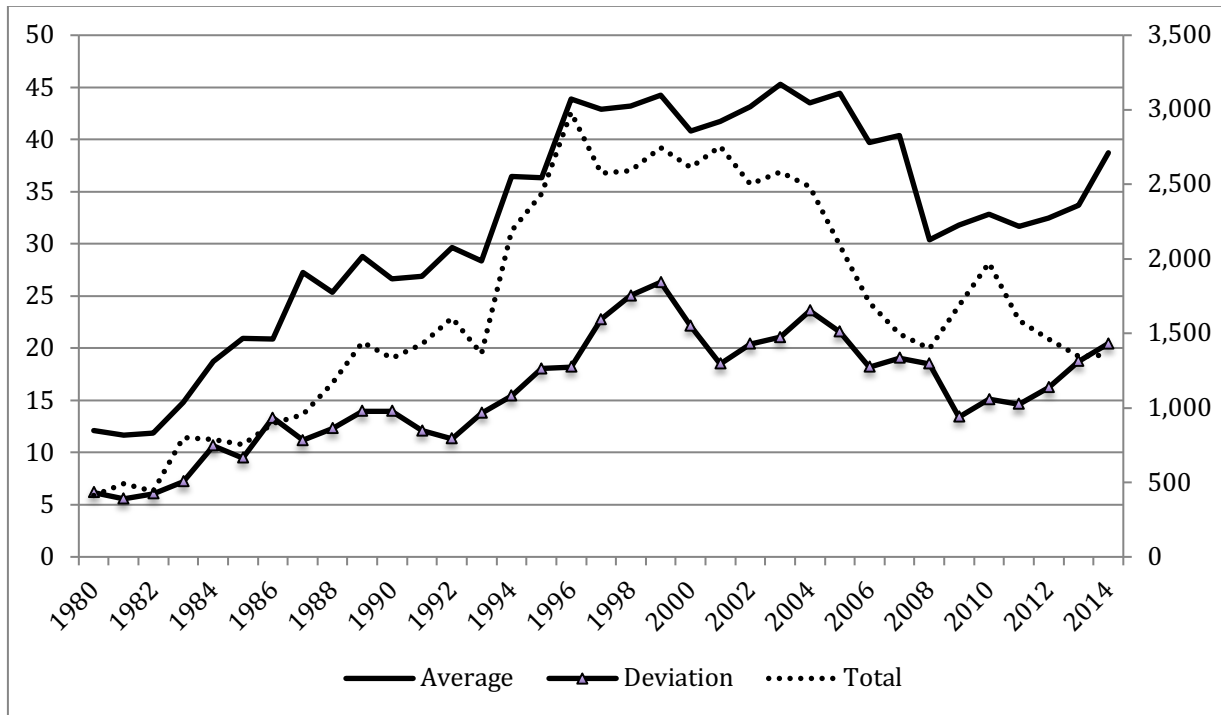
Figure 1: Changes in the structure of IMF conditions



Notes: The y-axis is the average conditions imposed per country in a given year. *QPCs* is quantitative performance criteria, *IBs* is indicative benchmarks, *PAs* is prior actions, *SPCs* is structural performance criteria, and *SBs* is structural benchmarks.

Source: Author's calculations based on Kentnelesis et al. (2016, 2017).

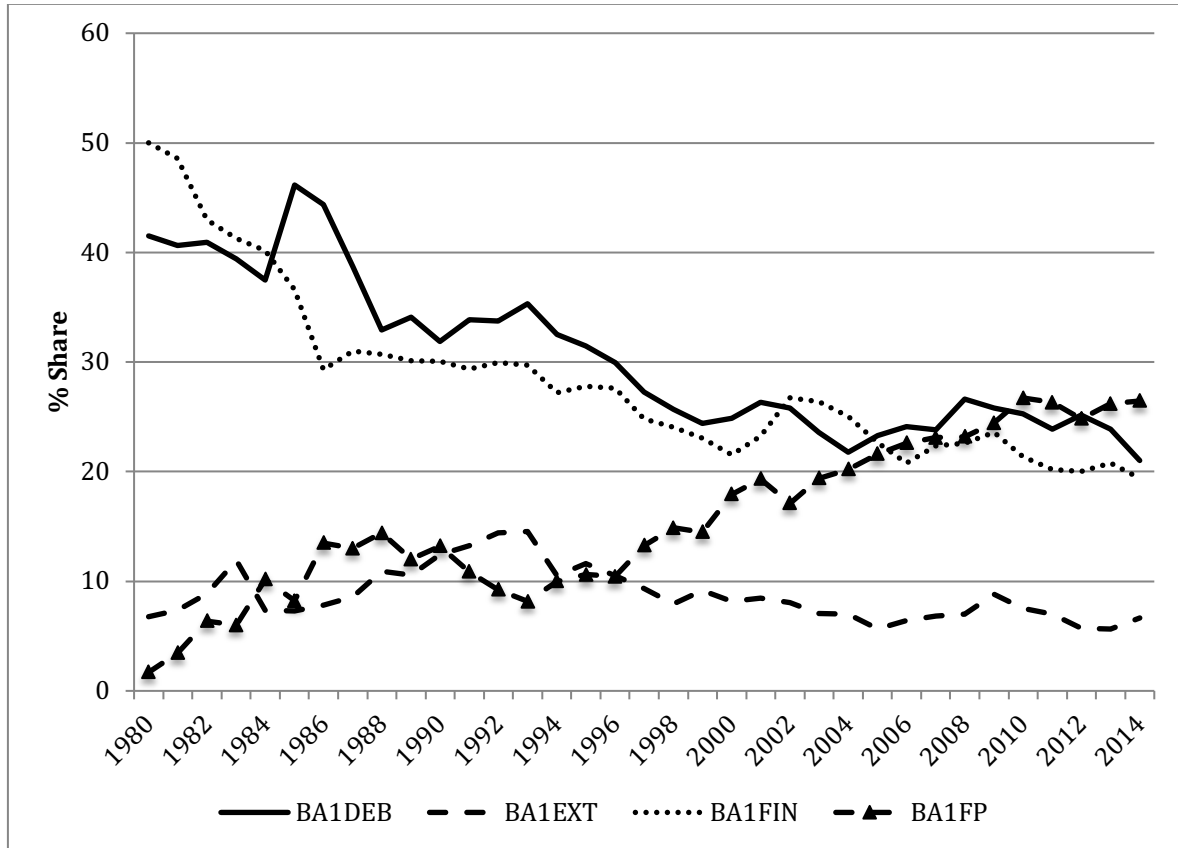
Figure 2: Changes in total and average number of conditions, 1980-2014



Notes: *Average* is the average number of conditions imposed on a given country in a given year (BA1TOT). *Deviation* is the standard deviation of number of conditions per country in a given year. *Total* (right axis) is the total number of conditions imposed on all IMF program countries in a given year.

Source: Author's calculations based on Kentnelesis et al. (2016, 2017).

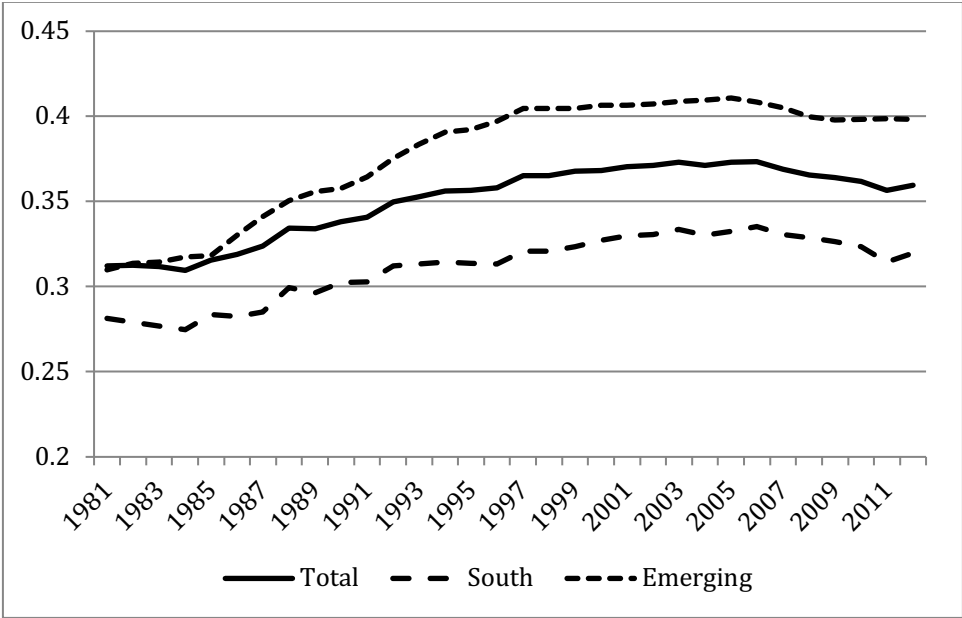
Figure 3: Percentage distribution of top four areas under IMF conditions



Notes: Percentage share of top four conditionality requirements. *BA1DEB* is external debt issues, *BA1EXT* is external sector, *BA1FIN* is financial sector, monetary policy and Central Bank issues, *BA1FP* is fiscal issues.

Source: Author's calculations based on Kentnelesis et al. (2016, 2017).

Figure 4: Changes in export sophistication over time



Notes: *Total* refers to the average level of (log) Intensity in the full sample. *South* and *Emerging* refers to the average Intensity in Rest of the South and Emerging South countries.

Source: Author’s calculations.

Table 1: Categories of IMF conditions

<b>A. IMF Conditions</b>	
1. Quantitative conditions	
1.1 Quantitative performance criteria (QPCs):	Quantifiable conditions that need to be fulfilled for the completion of a review and are classified as hard conditions. Examples: fiscal balances, levels of external debt.
1.2 Indicative benchmarks (IBs):	Complementary targets for quantitative performance criteria and are classified as hard conditions.
2. Structural conditions	
2.1 Prior actions (PAs):	Conditions that need to be met before IMF approves loans or finalizes a review. These are also used as necessary conditions if a country failed fulfill its prior commitments. These are the strictest conditions imposed on a borrowing country and are classified as hard conditions. Examples: Labor market reforms including reducing minimum wages, increasing retirement age or employee hiring and firing costs.
2.2 Structural performance criteria (SPCs):	Structural reforms that are considered as crucial for the success of an IMF program and are classified as hard conditions. Examples: Banking laws.
2.3 Structural benchmarks (SBs):	Non-quantifiable reform conditions and are classified as soft conditions. Examples: Reforms for financial sector, or management of public finances.
<b>B. Classification of Conditions</b>	
1. Fiscal Issues (FP)	
2. Revenues and tax issues (RTP)	
3. Financial sector, monetary policy, and Central Bank Issues (FIN)	
4. SOE reform and pricing (SOE)	
5. SOE privatization (PRI)	
6. External debt issues (DEB)	
7. External sector (trade and exchange system) (EXT)	
8. Labor issues (LAB)	
9. Social policy (SP)	
10. Redistributive policies (POV)	
11. Institutional reforms (INS)	
12. Land and environment (ENV)	
13. Residual category (OTH)	

Source: Adopted from Kentnelesis et al. (2016, 2017).



Table 2: Summary Statistics

Variable	Obs	Mean	Std.	Min	Max
$Intensity_{it}$	4,047	0.441	0.165	0.077	0.978
$Intensity_{it}^{OECD}$	4,047	0.401	0.122	0.201	0.739
$ECI_{it}$	3,079	0.068	1.016	-2.791	2.625
$Herfindabl_{it}$	4,090	0.176	0.146	0.000	0.960
$IMFProgram_{it}$	4,090	0.311	0.463	0	1
$BA1TOT_{it}$	4,090	11.097	19.625	0	148
$BA2TOT_{it}$	4,090	7.602	13.934	0	124
$BA3TOT_{it}$	4,090	18.699	33.130	0	272
$cBATOT_{it}$	3,480	7.609	13.757	0	114
$dBA1TOT_{it}$	3,480	9.462	17.838	0	126
$dBA2TOT_{it}$	3,480	6.671	12.852	0	93
$dBA3TOT_{it}$	3,480	16.133	30.323	0	204
$QCsTOT_{it}$	4,090	8.272	14.223	0	92
$QPCsTOT_{it}$	4,090	6.302	11.302	0	63
$IBsTOT_{it}$	4,090	1.970	5.330	0	56
$SCsTOT_{it}$	4,090	2.825	6.917	0	94
$PAsTOT_{it}$	4,090	0.899	3.496	0	78
$SPCsTOT_{it}$	4,090	0.400	1.378	0	27
$SBsTOT_{it}$	4,090	1.526	3.862	0	54
$\ln RGDP_{it}$	4,090	8.822	1.241	5.820	11.982
$RGDPG_{it}$	4,070	3.635	5.382	-50.248	149.973
$GFCFY_{it}$	4,054	21.917	8.613	0.293	219.069
$\ln Pop_{it}$	4,088	15.985	1.759	11.084	21.024
$HC_{it}$	3,822	2.267	0.708	1.016	3.719
$Openness_{it}$	4,085	60.795	73.592	0.000	1,372
$Credit_{it}$	4,042	44.584	40.507	0.001	312.027
$\ln REER_{it}$	4,090	4.029	1.430	0.000	9.346
$\ln ICRG_{it}$	3,181	4.157	0.245	2.657	4.575
$CA_{it}$	3,725	-2.431	10.120	-240.521	54.671
$Fiscal$	4,075	15.602	5.935	2.976	76.222
$Inflation$	4,004	50.471	649.916	-35.837	24,411
$UNSC_{it}$	3,852	0.073	0.260	0.000	1.000
$Pct.AgreeUS_{it}$	3,940	0.219	0.145	0.000	1.000

Notes:  $Intensity$ ,  $Intensity^{OECD}$ ,  $ECI$ , and  $Herfindabl$  refer to export intensity by Lall (2000), export intensity by OECD (2011), Economic Complexity Index, and Herfindahl export concentration index, respectively.  $IMFProgram$  is IMF program participation dummy.  $BA1TOT$ ,  $BA2TOT$ ,  $BA3TOT$  are total number of soft and hard IMF conditions, total number of hard conditions, and weighted sum of

hard and soft conditions, respectively.  $cBATOT$ ,  $dBA1TOT$ ,  $dBA2TOT$ ,  $dBA3TOT$  are implementation-corrected hard conditions, number of conditions discounted by interruptions, implementation-discounted hard conditions, and implementation-discounted weighted conditions, respectively.  $QCs$ ,  $QPCs$ ,  $IBs$ ,  $SCs$ ,  $PAs$ ,  $SPCs$ , and  $SBs$  are total quantitative conditions, quantitative performance criteria, indicative benchmarks, total structural conditions, prior actions, structural performance criteria, and structural benchmarks.  $GFCFY$  is the share of gross fixed capital formation in GDP,  $Pop$  is total population (millions),  $HC$  is human capital index,  $Openness$  is the share of exports and imports in GDP,  $Credit$  is the share of financial sector credit in GDP,  $REER$  is average effective real exchange rate,  $ICRG$  is international country risk guide political risk index,  $CA$  is current account balance in GDP,  $Fiscal$  is the general government final expenditures in GDP,  $UNSC$  is a dummy variable equaling one when a country is a temporary member in the United Nations Security Council,  $Pct.AgreeUS$  is Lijphart's index of agreement between a UN member state and the U.S.

Table 3: Effect of IMF programs and conditionality on trade structure

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	OLS	System	System	CFA	CFA
<i>IMFProgram<sub>t-1</sub></i>		-0.008** (0.004)	-0.026** (0.012)	-0.024 (0.016)	-0.008 (0.005)	-0.004 (0.006)
<i>BA2TOT<sub>t-1</sub></i>		0.0002* (0.0001)	0.0004 (0.0004)	0.0002 (0.0004)	0.0002 (0.0004)	-0.0001 (0.0003)
<i>lnRGDPPC<sub>t-1</sub></i>	0.015 (0.009)	0.015 (0.009)	0.014 (0.009)	0.005 (0.009)	0.015 (0.009)	0.005 (0.009)
<i>GFCFY<sub>t-1</sub></i>	0.001** (0.0004)	0.001** (0.0004)	0.001** (0.0003)	0.001** (0.0004)	0.001** (0.0003)	0.001** (0.0004)
<i>lnPop<sub>t-1</sub></i>	0.024 (0.030)	0.023 (0.031)	0.022 (0.030)	0.019 (0.034)	0.023 (0.030)	0.019 (0.033)
<i>HC<sub>t-1</sub></i>	0.080** (0.036)	0.080** (0.036)	0.077** (0.036)	0.052 (0.035)	0.080** (0.035)	0.054 (0.035)
<i>Openness<sub>t-1</sub></i>	0.001*** (0.0001)	0.001*** (0.0001)	0.001*** (0.0001)	0.001*** (0.0002)	0.001*** (0.0001)	0.001*** (0.0002)
<i>Credit<sub>t-1</sub></i>	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)
<i>lnREER<sub>t-1</sub></i>	-0.004 (0.003)	-0.004 (0.003)	-0.003 (0.003)	-0.005 (0.003)	-0.003 (0.003)	-0.005 (0.003)
<i>lnICRG<sub>t-1</sub></i>				0.027 (0.021)		0.024 (0.021)
<i>Constant</i>	-0.413 (0.510)	-0.399 (0.512)	-0.362 (0.496)	-0.270 (0.537)	-0.397 (0.500)	-0.286 (0.536)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	3,707	3,707	4,090	3,079	4,090	3,079
Number of countries	139	139	161	133	161	133
F-stat for Conditions	na	na	20.35***	18.23***	8.55***	6.83***
F-stat for Program	na	na	25.02****	20.74***	na	na
Joint F-Stat	na	na	26.42***	22.31***	na	na

Notes: The dependent variable is *Intensity*. The results are based on MLE with cluster-robust standard errors in parenthesis. \*\*\*, \*\*, and \* refer to  $p < 0.01$ ,  $p < 0.05$ ,  $p < 0.1$ , respectively. *Country FE* and *Year FE* are country and year fixed effects. *N* is the number of observations. *F-stat for Conditions* and *F-stat for Program* are p-values for Kleibergen-Paap F-statistics for the significance of compound IVs for the *IMFConditions* and *IMFProgram* equations. *Joint F-stat* is the p-value of the F-statistics for the joint significance of compound IVs. na is not available. For other variable definitions, refer to Table 1.

Table 4: Alternative composite measures of IMF conditionality

	(1)	(2)	(3)	(4)	(5)	(6)
	BA1	BA3	cBA	dBA1	dBA2	dBA3
<i>IMFProgram</i> <sub><i>t-1</i></sub>	-0.031** (0.013)	-0.03** (0.013)	-0.025** (0.012)	-0.029** (0.012)	-0.026** (0.012)	-0.029** (0.012)
<i>IMFConditions</i> <sub><i>t-1</i></sub>	0.001* (0.0003)	0.0003 (0.0002)	0.001 (0.0004)	0.001** (0.0003)	0.001* (0.0004)	0.0004** (0.0002)
<i>lnRGDPPC</i> <sub><i>t-1</i></sub>	0.015 (0.009)	0.014 (0.009)	0.015 (0.01)	0.015 (0.01)	0.015 (0.01)	0.015 (0.01)
<i>GFCFY</i> <sub><i>t-1</i></sub>	0.001** (0.0003)	0.001** (0.0003)	0.001* (0.0004)	0.001* (0.0004)	0.001* (0.0004)	0.001* (0.0004)
<i>lnPop</i> <sub><i>t-1</i></sub>	0.021 (0.029)	0.022 (0.03)	0.039 (0.033)	0.038 (0.033)	0.039 (0.033)	0.038 (0.033)
<i>HC</i> <sub><i>t-1</i></sub>	0.078** (0.036)	0.078** (0.036)	0.084** (0.040)	0.085** (0.040)	0.084** (0.040)	0.085** (0.040)
<i>Openness</i> <sub><i>t-1</i></sub>	0.0005*** (0.0001)	0.001*** (0.0001)	0.001*** (0.0002)	0.001*** (0.0002)	0.001*** (0.0002)	0.001*** (0.0002)
<i>Credit</i> <sub><i>t-1</i></sub>	0.0002** (0.0001)	0.0002** (0.0001)	0.0003*** (0.0001)	0.0003*** (0.0001)	0.0003*** (0.0001)	0.0003*** (0.0001)
<i>lnREER</i> <sub><i>t-1</i></sub>	-0.003 (0.003)	-0.003 (0.003)	-0.004 (0.003)	-0.004 (0.003)	-0.004 (0.003)	-0.004 (0.003)
<i>Constant</i>	-0.352 (0.494)	-0.355 (0.495)	-0.666 (0.558)	-0.651 (0.556)	-0.672 (0.558)	-0.659 (0.557)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	4,090	4,090	4,077	4,077	4,077	4,077
Number of countries	161	161	161	161	161	161
F-stat for Conditions	12.82***	16.03***	9.88***	4.82**	10.17***	7.17***
F-stat for Program	25.85***	26.09***	22.34***	20.17***	20.25***	20.79***
Joint F-Stat	25.87***	26.18***	22.37***	20.33***	20.81***	20.71***

Notes: The dependent variable is *Intensity*. The results are based on MLE with cluster-robust standard errors in parenthesis. \*\*\*, \*\*, and \* refer to  $p < 0.01$ ,  $p < 0.05$ ,  $p < 0.1$ , respectively. *Country FE* and *Year FE* are country and year fixed effects. *N* is the number of observations. *F-stat for Conditions* and *F-stat for Program* are p-values for Kleibergen-Paap F-statistics for the significance of compound IVs for the *IMFConditions* and *IMFProgram* equations. *Joint F-stat* is the p-value of the F-statistics for the joint significance of compound IVs. For other variable definitions, refer to Table 1.

Table 5: Quantitative and structural conditions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Quantitative conditions				Structural conditions		
	QCs	QPCs	IBs	SCs	PAs	SPCs	SBs
<i>IMFProgram<sub>t-1</sub></i>	-0.030** (0.012)	-0.024** (0.011)	-0.019* (0.012)	-0.023* (0.013)	-0.016 (0.011)	-0.020* (0.012)	-0.019 (0.013)
<i>IMFConditions<sub>t-1</sub></i>	0.001* (0.0003)	0.0005 (0.0004)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.004* (0.002)	0.001 (0.001)
<i>lnRGDPPC<sub>t-1</sub></i>	0.014 (0.009)	0.013 (0.009)	0.014 (0.009)	0.015 (0.009)	0.013 (0.009)	0.014 (0.009)	0.014 (0.009)
<i>GFCFY<sub>t-1</sub></i>	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)
<i>lnPop<sub>t-1</sub></i>	0.022 (0.030)	0.023 (0.030)	0.023 (0.030)	0.022 (0.029)	0.023 (0.030)	0.023 (0.030)	0.023 (0.029)
<i>HC<sub>t-1</sub></i>	0.079** (0.036)	0.078** (0.036)	0.078** (0.036)	0.077** (0.036)	0.077** (0.036)	0.077** (0.036)	0.077** (0.036)
<i>Openness<sub>t-1</sub></i>	0.001*** (0.0001)	0.001*** (0.0001)	0.001*** (0.0001)	0.001*** (0.0002)	0.001*** (0.0001)	0.001*** (0.0001)	0.001*** (0.0001)
<i>Credit<sub>t-1</sub></i>	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)
<i>lnREER<sub>t-1</sub></i>	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)
<i>Constant</i>	-0.363 (0.495)	-0.373 (0.496)	-0.376 (0.492)	-0.360 (0.494)	-0.367 (0.494)	-0.378 (0.493)	-0.371 (0.493)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	4,090	4,090	4,090	4,090	4,090	4,090	4,090
Number of countries	161	161	161	161	161	161	161
F-stat for Conditions	8.23***	18.11***	0.60	18.74***	33.49***	5.54**	12.69***
F-stat for Program	20.85***	22.15***	13.84***	24.01***	15.86***	16.35***	20.95***
Joint F-Stat	21.56***	22.85***	14.26***	29.83***	44.06***	17.82***	23.17***

Notes: The dependent variable is *Intensity*. The results are based on MLE with cluster-robust standard errors in parenthesis. \*\*\*, \*\*, and \* refer to  $p < 0.01$ ,  $p < 0.05$ ,  $p < 0.1$ , respectively. *Country FE* and *Year FE* are country and year fixed effects. *N* is the number of observations. *F-stat for Conditions* and *F-stat for Program* are p-values for Kleibergen-Paap F-statistics for the significance of compound IVs for the *IMFConditions* and *IMFProgram* equations. *Joint F-stat* is the p-value of the F-statistics for the joint significance of compound IVs. na is not available. For other variable definitions, refer to Table 1.

Table 6: IMF conditions by type

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	QCs&SCs	FP	RTP	FIN	SOE	PRI	DEB
<i>IMFProgram</i> <sub><i>t-1</i></sub>	-0.031** (0.012)	-0.025** (0.012)	-0.0252** (0.012)	-0.025** (0.012)	-0.025** (0.011)	-0.026** (0.012)	-0.024** (0.011)
<i>IMFQConditions</i> <sub><i>t-1</i></sub>	0.0004 (0.0004)						
<i>IMFSCConditions</i> <sub><i>t-1</i></sub>	0.0006 (0.0008)						
<i>IMFConditions</i> <sub><i>t-1</i></sub>		0.002 (0.003)	-0.001 (0.003)	-0.000 (0.002)	-0.0001 (0.008)	-0.00001 (0.003)	-0.001 (0.001)
<i>IMFResConditions</i> <sub><i>t-1</i></sub>		0.0002 (0.0004)	0.0005 (0.0004)	0.0005 (0.001)	0.0004 (0.0004)	0.0005 (0.0004)	0.001 (0.001)
<i>lnRGDPPC</i> <sub><i>t-1</i></sub>	0.015 (0.009)	0.014 (0.009)	0.013 (0.009)	0.014 (0.009)	0.014 (0.009)	0.014 (0.009)	0.015* (0.009)
<i>GFCFY</i> <sub><i>t-1</i></sub>	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)
<i>lnPop</i> <sub><i>t-1</i></sub>	0.021 (0.029)	0.022 (0.029)	0.022 (0.029)	0.023 (0.029)	0.022 (0.029)	0.022 (0.029)	0.023 (0.029)
<i>HC</i> <sub><i>t-1</i></sub>	0.078** (0.036)	0.078** (0.036)	0.078** (0.036)	0.077** (0.035)	0.077** (0.036)	0.077** (0.036)	0.077** (0.035)
<i>Openness</i> <sub><i>t-1</i></sub>	0.0005*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)
<i>Credit</i> <sub><i>t-1</i></sub>	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)
<i>lnREER</i> <sub><i>t-1</i></sub>	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)
<i>Constant</i>	-0.349 (0.495)	-0.358 (0.495)	-0.359 (0.496)	-0.368 (0.494)	-0.366 (0.496)	-0.365 (0.496)	-0.381 (0.496)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	3,707	4,090	4,090	4,090	4,090	4,090	4,090
Number of countries	139	161	161	161	161	161	161

F-stat for Conditions (1)	21.76***	1.57	5.05**	14.40***	4.80**	16.77***	9.32***
F-stat for Conditions (2)	15.97***	17.24***	18.28***	13.55***	26.73***	19.61***	9.10***
F-stat for Program	29.95***	20.89***	22.16***	21.18***	27.83***	24.84***	17.19***
Joint F-Stat	36.53***	24.81***	23.63***	22.08***	32.86***	33.24***	19.58***

Notes: The dependent variable is *Intensity*. The results are based on MLE with cluster-robust standard errors in parenthesis. \*\*\*, \*\*, and \* refer to  $p < 0.01$ ,  $p < 0.05$ ,  $p < 0.1$ , respectively. *Country FE* and *Year FE* are country and year fixed effects. *N* is the number of observations. *F-stat for Conditions (1)* and *F-stat for Conditions (2)* are p-values for Kleibergen-Paap F-statistics for the significance of compound IVs for the *IMFConditions* and *IMFResConditions* equations. *F-stat for Program* is p-values for Kleibergen-Paap F-statistics for the significance of compound IVs for the *IMFProgram* equation. *Joint F-stat* is the p-value of the F-statistics for the joint significance of compound IVs. For other variable definitions, refer to Table 1.



Table 7: IMF conditions by type (continued)

	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	EXT	LAB	SP	POV	INS	ENV	OTH
<i>IMFProgram</i> <sub><i>t-1</i></sub>	-0.026** (0.012)	-0.024** (0.011)	-0.027** (0.012)	-0.022** (0.011)	-0.025** (0.012)	-0.025** (0.012)	-0.025** (0.012)
<i>IMFConditions</i> <sub><i>t-1</i></sub>	0.002 (0.004)	0.004 (0.004)	-0.021 (0.014)	0.021*** (0.005)	-0.001 (0.026)	0.01 (0.03)	0.014 (0.023)
<i>IMFResConditions</i> <sub><i>t-1</i></sub>	0.0003 (0.0004)	0.0003 (0.0004)	0.001* (0.0004)	0.0001 (0.0002)	0.0004 (0.0004)	0.0004 (0.0004)	0.0004 (0.0003)
<i>lnRGDPPC</i> <sub><i>t-1</i></sub>	0.014 (0.009)	0.014 (0.009)	0.013 (0.009)	0.013 (0.009)	0.014 (0.009)	0.014 (0.009)	0.014 (0.009)
<i>GFCFY</i> <sub><i>t-1</i></sub>	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)	0.001** (0.0003)
<i>lnPop</i> <sub><i>t-1</i></sub>	0.021 (0.029)	0.022 (0.029)	0.021 (0.029)	0.024 (0.029)	0.022 (0.029)	0.022 (0.029)	0.022 (0.029)
<i>HC</i> <sub><i>t-1</i></sub>	0.077** (0.035)	0.077** (0.036)	0.078** (0.036)	0.0786** (0.036)	0.077** (0.036)	0.077** (0.036)	0.077** (0.036)
<i>Openness</i> <sub><i>t-1</i></sub>	0.0005*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)	0.001*** (0.0001)	0.001*** (0.0001)	0.0005*** (0.0001)
<i>Credit</i> <sub><i>t-1</i></sub>	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)
<i>lnREER</i> <sub><i>t-1</i></sub>	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.004 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)
<i>Constant</i>	-0.346 (0.496)	-0.367 (0.497)	-0.339 (0.495)	-0.380 (0.496)	-0.362 (0.499)	-0.361 (0.496)	-0.364 (0.497)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	4,090	3,707	4,090	4,090	4,090	4,090	4,090
Number of countries	161	139	161	161	161	161	161
F-stat for Conditions (1)	10.48***	0.47	0.86	12.86***	0.52	31.82***	0.04
F-stat for Conditions (2)	20.61***	20.5***	18.26***	21.46***	15.67***	21.33***	20.90***
F-stat for Program	21.79***	25.21***	24.29***	25.42***	22.59***	25.17***	24.95***
Joint F-Stat	24.69***	26.89***	25.18***	45.56***	24***	50.81***	28.98***

Notes: The dependent variable is *Intensity*. The results are based on MLE with cluster-robust standard errors in parenthesis. \*\*\*, \*\*, and \* refer to  $p < 0.01$ ,  $p < 0.05$ ,  $p < 0.1$ , respectively. *Country FE* and *Year FE* are country and year fixed effects. *N* is the number of observations. *F-stat for Conditions (1)* and *F-stat for Conditions (2)* are p-values for Kleibergen-Paap F-statistics for the significance of compound IVs for the *IMFConditions* and *IMFResConditions* equations. *F-stat for Program* is p-values for Kleibergen-Paap F-statistics for the significance of compound IVs for the *IMFProgram* equation. *Joint F-stat* is the p-value of the F-statistics for the joint significance of compound IVs. For other variable definitions, refer to Table 1.

Table 8: Alternative measures of export intensity

	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	OLS	System	System	CFA	CFA
Intensity-OECD						
<i>IMFProgram<sub>t-1</sub></i>		0.003 (0.004)	-0.014 (0.033)	-0.043* (0.026)	0.006 (0.007)	-0.001 (0.011)
<i>IMFConditions<sub>t-1</sub></i>		-0.00001 (0.000)	-0.0002 (0.001)	0.0003 (0.001)	-0.001 (0.000)	-0.0003 (0.001)
<i>N</i>	3,707	3,707	4,090	3,079	4,090	3,079
Number of countries	139	139	161	133	161	133
ECI						
<i>IMFProgram<sub>t-1</sub></i>		-0.018 (0.022)	-0.092* (0.053)	-0.123** (0.062)	-0.033 (0.039)	-0.043 (0.041)
<i>IMFConditions<sub>t-1</sub></i>		-0.0004 (0.001)	0.001 (0.001)	0.001 (0.001)	0.0001 (0.002)	0.0003 (0.002)
<i>N</i>	2,938	2,938	3,936	3,027	3,936	3,027
Number of countries	108	108	161	133	161	133
Herfindahl index						
<i>IMFProgram<sub>t-1</sub></i>		-0.003 (0.005)	-0.046** (0.021)	-0.023 (0.018)	-0.013 (0.009)	-0.008 (0.011)
<i>IMFConditions<sub>t-1</sub></i>		-0.00003 (0.0002)	0.001 (0.0005)	0.0001 (0.0002)	-0.0002 (0.0004)	-0.0002 (0.0002)
<i>N</i>	3,781	3,781	4,124	3,100	4,124	3,100
Number of countries	139	139	161	133	161	133

Notes: *Intensity-OECD* is the OECD based definition of export intensities.