



# NAMIBIA

## SELECTED ISSUES

December 2016

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# NAMIBIA

November 17, 2016

## SELECTED ISSUES

Approved By  
African Department

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# CALIBRATING “GROWTH-FRIENDLY” FISCAL CONSOLIDATION IN NAMIBIA<sup>1</sup>

1. **The authorities in Namibia have embraced ambitious fiscal consolidation plans, and the key challenge is to minimize the negative effects on growth.** Depending on the size, pace and composition, fiscal consolidation can negatively affect growth both in the short and long term. In the short term, consolidation reduces domestic demand and, depending on short-term multipliers, growth. Fiscal consolidation could also introduce or exacerbate distortions and negatively affect potential growth. Minimizing the negative impact of consolidation on growth is especially important in Namibia where unemployment is close to 30 percent (with more than 40 percent of youth unemployed), and income inequality is the second highest in the world.
2. **This paper assesses the impact on growth of alternative fiscal consolidation strategies using model simulations.** With the 2016–2018 Medium-Term Fiscal Framework (March 2016), the authorities embraced a three-year fiscal consolidation plan, focusing on reducing current expenditure and containing capital spending growth. Additional consolidation efforts for FY16/17 were envisaged in the 2016 Mid-Year Budget Review. However, recent macroeconomic projections suggest that an additional cumulative adjustment of about 5 percent of GDP is needed to put public debt on a declining path and secure sustainability. Given the significant size of the additional adjustment, two issues are important for growth: the pace and the composition of the adjustment. This paper assumes that the additional adjustment is equally split over the next three fiscal years, and focuses on how to design the composition of the correction to minimize the impact on growth.
3. **To gain insights on what would be a growth-friendly composition of the fiscal adjustment, the paper relies on the DIGNAR model developed at the IMF** (Debt, Investment, Growth and Natural Resources).<sup>2</sup> The model is calibrated to reflect the main features of the Namibian economy (see Appendix A). DIGNAR is a dynamic general equilibrium macroeconomic framework that encompasses a set of policy variables. On the revenue side, it includes changes in income and consumption taxes. On the expenditure side, it includes changes on current expenses and capital spending. Moreover, the model allows assessing the impact of fiscal structural reforms of revenue administration and public investment management.

## A. Alternative Fiscal Consolidation Options

4. **Three alternative fiscal consolidation scenarios are considered given the baseline.** The baseline reflects measures already announced in the 2016 Medium-Term Fiscal Framework for the period 2016/17–2018/19, and recent revisions to the FY16/17 budget. These measures focus on: reducing non-wage expenditures in real terms, and containing the growth rate of government investment (with suspension of several capital projects in FY16/17), with very limited changes on the

<sup>1</sup> Prepared by Giovanni Melina.

<sup>2</sup> For details, see Melina, Yang and Zanna (2016).

revenue side. However, as the macroeconomic outlook has deteriorated, despite consolidation plans, public debt would be non-sustainable. In line with Fund's advice (see IMF, 2016), about 5 percent of GDP in additional measures is needed over the next three years to bring public debt on a declining path. This paper considers three possible strategies (scenarios) to achieve such an adjustment:

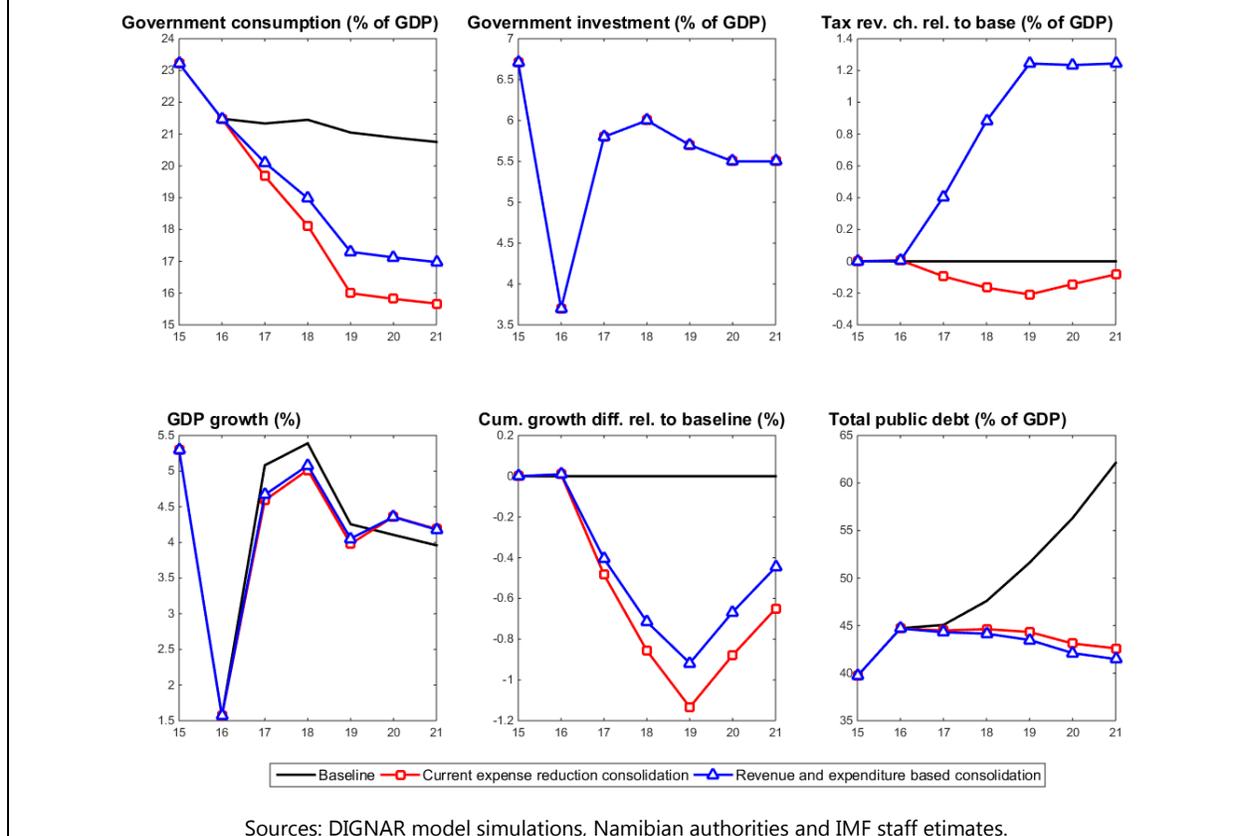
- **Scenario 1: Expenditure-based consolidation.** This strategy foresees an additional permanent reduction in current expenses by 1.7 percent of GDP per year over the period FY17/18-FY19/20.
- **Scenario 2: Revenue and expenditure-based consolidation.** This "balanced" strategy achieves the same fiscal adjustment as in scenario 1 (1.7 percent of GDP adjustment per year over three year), but assumes that a quarter of the adjustment is achieved by increasing indirect taxation. In this context, the additional benefits from improving tax collection efficiency are also considered.
- **Scenario 3: Investment-friendly consolidation.** This strategy follows scenario 2, and, in addition, assumes a change in the composition of expenditures. In particular, the strategy entails an additional one-percent-of-GDP reduction in current expenses to finance a corresponding increase in public investment. In this context, the growth benefits of structural reforms in public investment management are also considered.

## B. Growth Impact of Alternative Consolidation Plans

**5. Additional consolidation through spending reductions (scenario 1) is expected to have substantial cumulative negative effects on growth.** Under this scenario, public debt would decline and reach about 43 percent of GDP by 2021/22. However, over the three-year consolidation period, the cumulated negative effects on growth is almost 1.2 percent, relative to the baseline scenario (Figure 1, red lines). The effect of adjustment on growth is partly contained by the significant openness of the economy, with large shares of imports in government purchases, and the assumption that spending reductions occur in unproductive current expenditures.

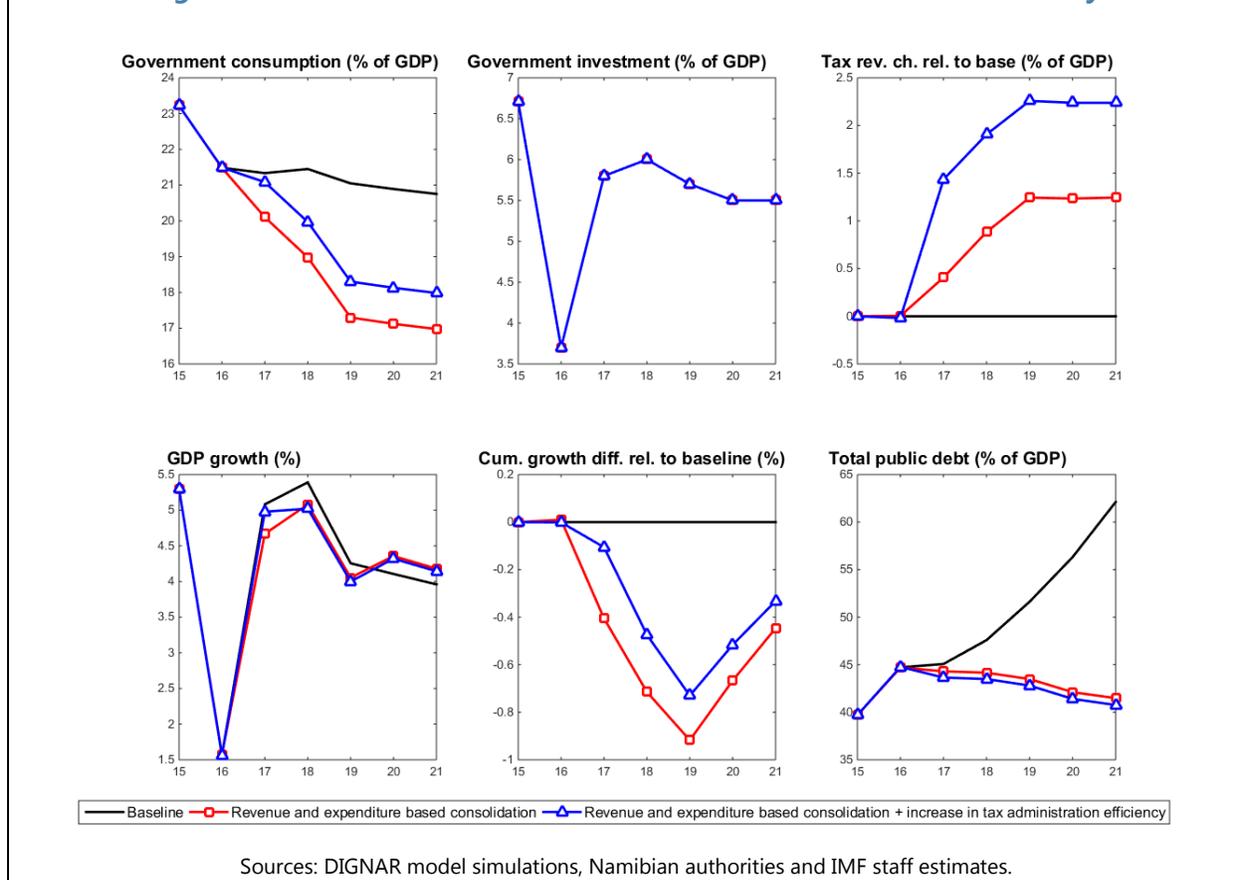
**6. A combined strategy of revenue and expenditure measures (scenario 2) has lower negative effects on growth than a pure expenditure-based adjustment.** Combined revenue-expenditure measures would result a public debt path similar to scenario 1. However, the negative impact on growth, relative to the baseline scenario, is smaller than under scenario 1. This result is mainly due to the combined effect of two factors: (i) the increase in revenue is attained through increasing consumption taxes, characterized by a lower distortionary impact than income taxation; and (ii) the model includes a significant share of financially-constrained agents, who are "hand-to-mouth" and do not increase savings in response to the increase in taxes.

**Figure 1. Namibia: Effects of Expenditure-Based versus Revenue and Expenditure-Based Fiscal Consolidation**



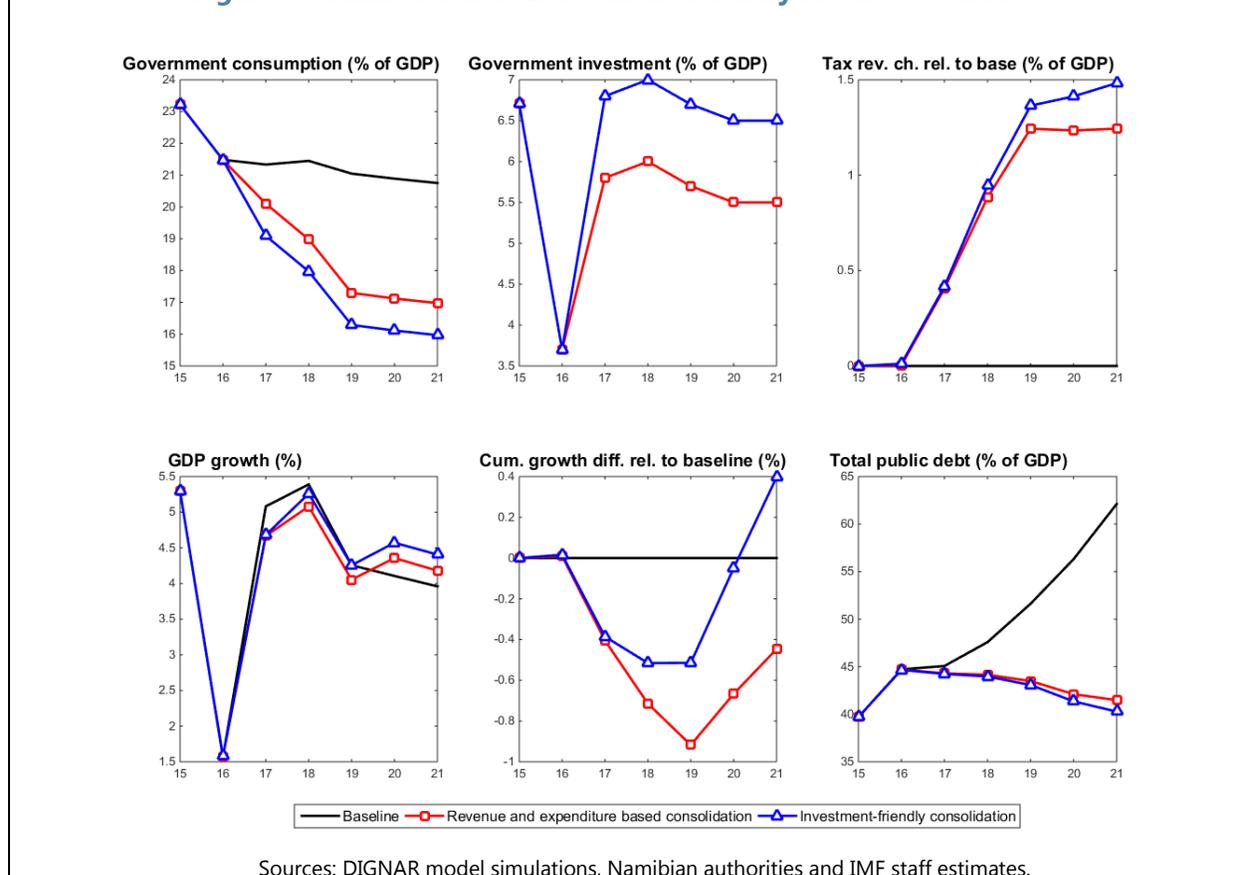
**7. Improving revenue administration has the potential to limit further the negative impact on growth.** Revenue administration in Namibia has substantial room for improvement (see IMF, 2016). We consider the impact of improving tax collection efficiency to achieve a one percent of GDP increase in tax revenues. In the DIGNAR model, better collection efficiency is assumed not to have substitution effects for saving and labor decisions (only income effects), thus allowing to reduce the overall spending adjustment at limited macroeconomic costs. In this context, an adjustment that includes improvements in tax collection efficiency has in general smaller negative effects on GDP. In the case of scenario 2, it would reduce the cumulative growth loss by a fifth to less than 0.8 percent, compared to the case with no revenue efficiency gains (Figure 2).

**Figure 2. Namibia: Effects of an Increase in Tax Administration Efficiency**



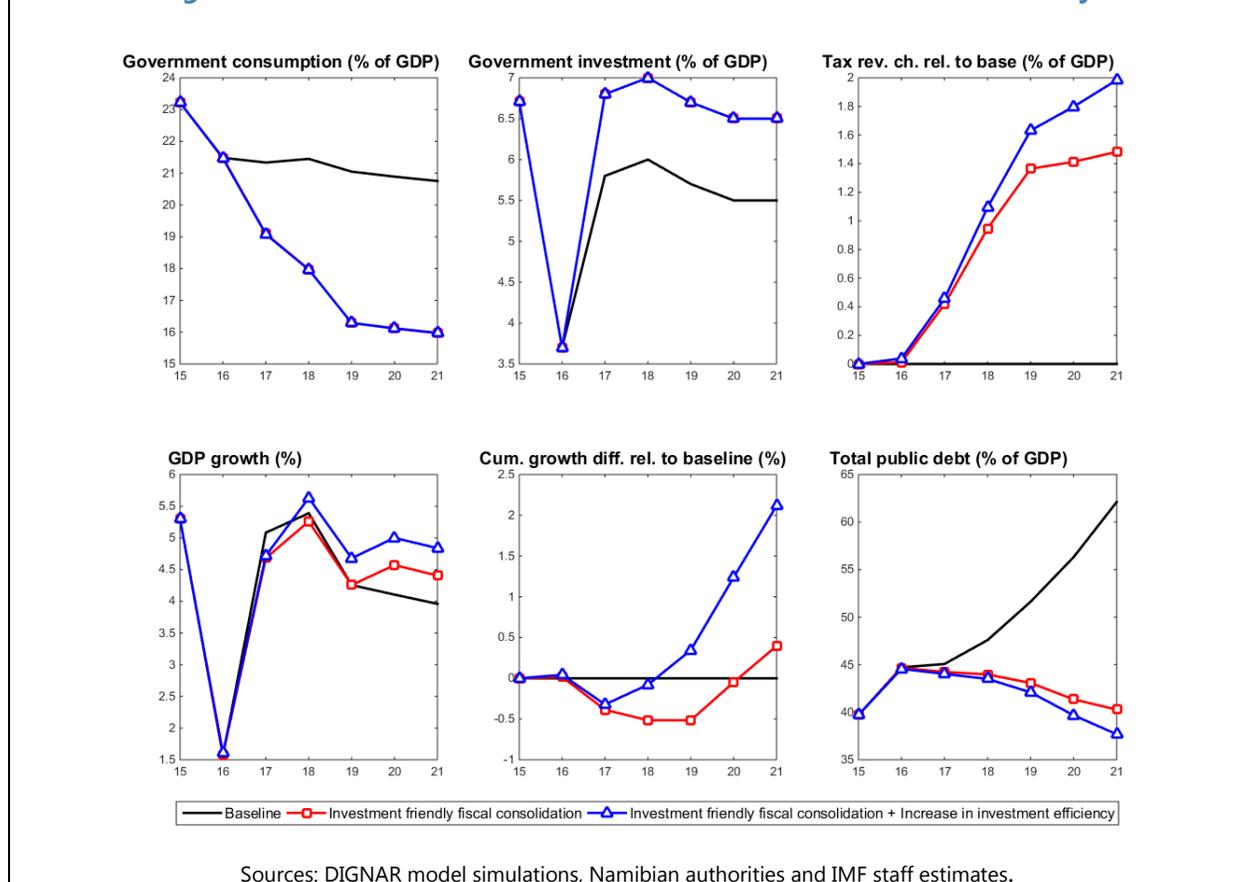
**8. The investment-friendly consolidation strategy (scenario 3) is the most pro-growth adjustment strategy of all.** In the DIGNAR model, public investment feeds into the accumulation of public capital, which in turn is assumed to raise the productivity of private factors, thus boosting overall growth. As a result, freeing resources to increase capital spending can yield significantly improved growth paths. Starting with scenario 2, increasing investment by one percent of GDP (financed through lower current expenditures) is estimated to mitigate the growth effects of adjustment to around 0.4 percent over 2017/18–2019/20 (Figure 3). In addition, as public capital accumulates over time, the differences in the growth impact between the two scenarios widen over the medium term and by 2021, the cumulated growth effect for scenario 3 is positive and one percentage points higher than under the combined revenue and expenditure consolidation strategy. Better growth outcomes also benefit the fiscal performance, with improvements, albeit small, in the public debt ratio path.

Figure 3. Namibia: Public Investment-Friendly Fiscal Consolidation



**9. Structural reforms improving the efficiency of public investment can further reduce the negative effect of consolidation on growth, and potentially strengthen growth.** Not every dollar of capital expenditures usually translates into a one-dollar increase in productive public capital (see, e.g., Dabla-Norris et al., 2012, among others). Structural reforms improving project design, selection, implementation and governance can, therefore, significantly reduce wastes and enhance the quality of public infrastructure. This means that a greater fraction of investment expenditures turns into productive public capital. For illustrative purposes, Figure 4 reports alternative simulations of the investment-friendly scenario 3 assuming that project expenditure started from FY17/18 is 15 percent more efficient. The impact of this assumption on cumulated GDP growth is sizable (about 2 percent), with clear positive effect on the public debt ratio that declines faster. Similar effects (although to a smaller extent) would hold if improvements in public investment efficiency were to be implemented in conjunction with the other consolidation strategies.

**Figure 4. Namibia: Effects of an Increase in Public Investment Efficiency**



**10. Overall, minimizing the negative impact of fiscal consolidation on growth requires to combine revenue and expenditure measures, together with fiscal structural reforms.**

Although multipliers in Namibia seem to be low, the needed additional fiscal adjustment to bring public debt on a declining path can have significant cumulative effects on growth. To minimize these effects, combining reductions in current expenditure with increases in indirect taxes appears to be the best strategy because such a combination better exploits the relative low distortionary impact of indirect taxation on investment and labor decisions, and allows to sustain essential public services. Even better growth outcomes can be attained if this strategy is accompanied by: (i) a change in the expenditure composition in favor of public investment, (ii) structural reforms in public finance management that raise the level of investment efficiency, and (iii) reforms improving tax collection efficiency. In fact, unlike current expenditures, public investment increases the stock of public capital in the economy, which in turn raises the productivity of private factors for production. A greater investment efficiency translates into a larger part of each dollar of investment expenditures being effectively turned into public capital. Finally, improving the tax collection efficiency, by enlarging the tax base, raises government revenues and ease pressures on public debt, allowing the government to set tax rates at a relatively lower level.

**Table 1. Calibration of Initial Steady-State for the Case of Namibia**

Target	Value
(in percent of GDP unless otherwise indicated)	
Annual GDP growth rate (in percent)	5.3
Exports	41.7
Imports	56.8
Government consumption	23.2
Government investment expenditures	6.7
Private investment	20.9
Mining value added	10.0
Government domestic debt	21.4
Private foreign debt	35.1
Government external commercial debt	18.3
Grants (including SACU transfers)	11.6

Sources: Namibian Authorities and IMF staff estimates.

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Melina G., Yang S.-C. S. and L.-F. Zanna (2016). Debt Sustainability, Public Investment and Natural Resources in Developing Countries: the DIGNAR Model, *Economic Modelling*, 52, pp. 630–649.

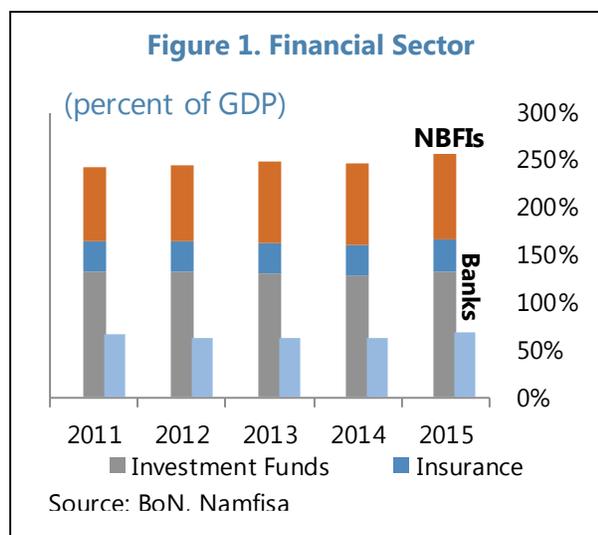
Dabla-Norris, E., Brumby, J., Kyobe, A. Mills, Z. and C. Papageorgiou (2012). Investing in public investment: an index of public investment efficiency, *Journal of Economic Growth*, 17, pp. 235-266.

# MACRO-FINANCIAL RISKS FROM LINKAGES BETWEEN BANKS AND NON-BANK FINANCIAL INSTITUTIONS<sup>1</sup>

**1. Non-bank financial institutions (NBFIs) play an important role in Namibia and have recently attracted the attention of regulators worldwide as a source of potential systemic risk.** Risks from these institutions arise because they face bank-like risks but tend to be lightly regulated.<sup>2</sup> For this reason, since 2011, the Financial Stability Board (FSB) has led a project to monitor their activities and improve the regulatory framework. This debate is especially relevant for Namibia where NBFIs dominate the financial sector, contribute to finance the government, and affect financial flows towards foreign markets. This note analyzes the role of NBFIs in Namibia's financial sector and, in particular, the potential risks they may pose to macrofinancial stability because of the linkages between investment funds and domestic banks.<sup>3</sup>

## A. The Non-Bank Financial Industry in Namibia

**2. Namibia's financial sector is large and dominated by NBFIs that have gross assets four times larger than banks.** The financial sector had gross assets of about 330 percent of GDP at end 2015, with NBFIs' assets accounting for almost 260 percent of GDP and banks' assets only about 70 percent of GDP. The large NBFIs mainly include insurance companies (both long and short term), pension funds, money market funds (called unit trusts), and asset managers (investment management companies). As insurance companies and pension funds rely on investment funds to manage their assets, gross assets overestimate the size of the financial sector. However, investment funds, also called shadow banking system (i.e. money market and asset management funds), alone account for 130 percent of GDP at end 2015 and are twice as large as banks. As a result, the shadow banking system accounts for about 40 percent of the financial sector assets. This share is larger than in most advanced economies with highly developed financial systems, such as the US, EU, UK and Japan.<sup>4</sup> This structure might reflect local investor's



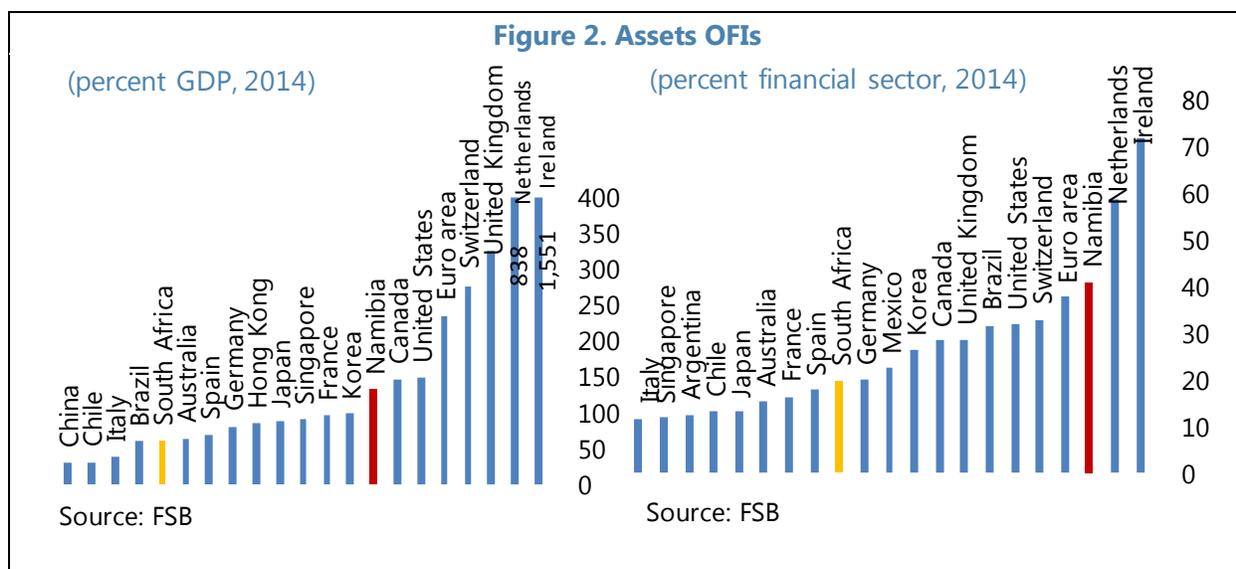
<sup>1</sup> Prepared by Jose Torres.

<sup>2</sup> For more details on their growth, risks and regulatory responses around the world, see the IMF's Global Financial Stability Report (GFSR, Fall, 2014) and the FSB's Shadow Banking Monitor (2015).

<sup>3</sup> For an analysis of similar issues, see the 2016 Article IV Consultation Staff Report for Luxembourg (IMF Country Report, 16/218).

<sup>4</sup> It is worth noticing that the 2015 FSB's Shadow Banking Monitor considers the interconnection with banks to be particularly large in Brazil, Chile, UK and South Africa where NBFIs account for more than 10 percent of bank's assets.

preference for products offered by these institutions over banks' deposits, as they tend to yield higher returns and are not perceived as entailing higher risks (possibly because some belong to the same financial conglomerates as banks and due to the absence of bank deposit guarantees).<sup>5</sup>



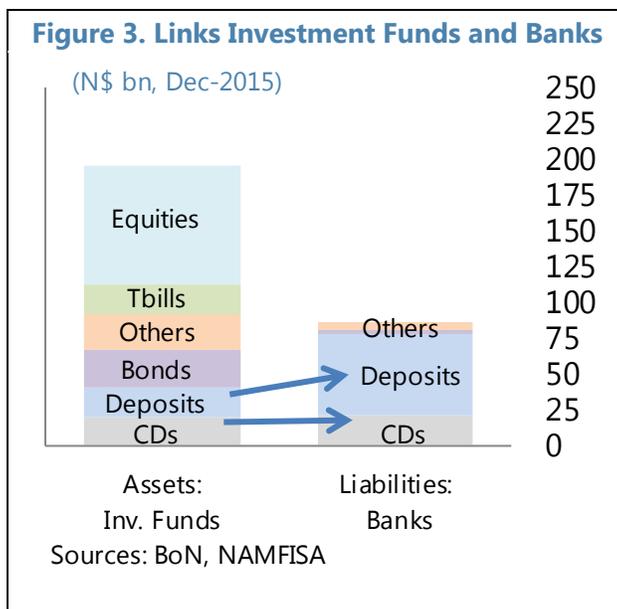
**3. Despite their size, NBFIs in Namibia are lightly supervised with no risk-based supervision yet in place.** NAMFISA supervises and regulates the industry. However, supervision is mostly guided by compliance and not by riskiness, with NAMFISA in the process of developing adequate databases to strengthen supervision going forward. At present, NAMFISA and BoN (which supervises banks) jointly publish an annual Financial Stability Report, but coordination on risk-based supervision is limited despite clear links between banks and NBFIs (see below).

## B. Linkages Between Investment Funds, Domestic Banks, and the Economy

**4. An important trait of Namibia's financial system is the close links between investment funds and domestic banks.** Linkages occur through balance sheets and ownership.

- *Balance sheet.* Investment funds provide about half of bank financing, including 40 percent of banks' deposits and more than 90 percent of CDs.
- *Ownership.* There are four financial conglomerates in Namibia (three of which are foreign owned with exposures to South Africa and the UK). Each conglomerate holds a commercial bank, insurance businesses (both long and short term), and investment funds.

<sup>5</sup> For a detailed description of the characteristics of the Namibian financial system see IMF Country Report 15/276.



**Table 1. Namibia: Ownership Links in the Financial Sector**

<b>Group Sector</b>	<b>Standard Bank Namibia Holding LTD</b>	<b>NedNamibia Holdings LTD</b>	<b>FNB Namibia Holdings LTD</b>	<b>Bank Windhoek Holding</b>
<b>Bank</b>	Standard Bank Namibia	Nedbank	FNB Namibia	Bank Windhoek
<b>Insurance</b>	Liberty Life Namibia	NedNamibia Life Assurance	Outsurance Insurance Company	Santam (28%) Sanlam (30%)
<b>Unit trust</b>	Liberty Life Namibia	Old Mutual Unit Trust 1/	FNB Namibia Unit Trust	Capricorn Unit Trust
<b>Asset manager</b>	Liberty Life Namibia	Old Mutual Investment 1/	Swabou Investments	Capricorn Asset Management

1/ Old Mutual owns NedNamibia Holdings  
Source: Companies' Annual Financial Reports

Investment funds play an important role in the economy and may potentially affect growth both through direct and indirect channels. Looking at direct channels, the financial sector accounts for about 7 percent of GDP (up from less than 2 percent in 2001), contributes almost 3 percent of total annual government's revenue and holds the majority of government's debt. While investment funds do not provide direct credit to the economy, they can indirectly affect the ability of banks to provide credit. Investment funds' deposits in the banking system indirectly finance about ¼ of banks' loans, and any change in their asset portfolio that affects banks' deposits may have significant effect on

banks' ability to extend credit to the economy, as banks' funding is largely through deposits.<sup>6</sup> In turn, bank credit and GDP growth are highly correlated. The 2015 Article IV for Namibia estimated that a 1 percent change in real credit is associated with about 0.5 increase in long-run growth. In this respect, the relation seems to be particularly large in Namibia, compared to other countries, where the empirical distribution between 1970–2015 shows that on average growth increases by about 0.2 percent when real credit growth rises by one percent.<sup>7</sup>

### C. Investment Funds as a Conduit of Shocks

#### 5. Two additional features characterize investment funds: they raise funds from both domestic institutional and private investors and have large and risky foreign exposures.

Almost 80 percent of their funds come from institutional investors (60 percent from pension funds and 20 percent from insurance companies, as of 2015), with the remaining part roughly equally distributed between corporations and households. On the asset side, investment funds hold about 50 percent of their assets in Namibia,<sup>8</sup> about a third in South Africa<sup>9</sup>, and the rest (about 15 percent) in advanced economies. In terms of type of investment, about 40 percent of investments are in short-term assets (evenly distributed between treasury bills, CDs and deposits), and the remaining 60 percent is mostly invested in bonds and equities. Due to data limitations, information on the geographical distribution of the different type of assets is not available. However, deposits and CDs, half of their treasury bills and most of bond holdings are likely domestic assets.<sup>10</sup> Since the market capitalization of the Namibia Stock Exchange is dominated by dual listed South African companies (mostly in the financial sector; capitalization of single-listed companies is about 20 percent of GDP), investment funds' equity portfolio of (about 60 percent of GDP) could be considered as a foreign exposure and subject to the inherent volatility of stocks. For example, the annualized volatility range for the JSE top 40 index in 2016 has consistently been above 20 percent in 2016 (as measured by the VIX).<sup>11</sup>

**6. Given their asset exposure and linkages with banks, investment funds can propagate external shocks to the domestic economy and amplify domestic ones.** For instance, a sufficiently large redemption shock could force investment funds to liquidate assets to cope with outflows. To avoid fire selling less liquid positions and limit losses, portfolio managers would probably use their holdings of domestic deposits in the banking system as their first line of defense for liquidity.<sup>12</sup>

<sup>6</sup> Calculated as the ratio between investment funds' deposits with the banking system and banks' overall credit

<sup>7</sup> Estimated from a consistency exercise between macro and financial forecasts using a cross-country sample of about 100 countries

<sup>8</sup> Pension funds and insurance companies are required to invest at least 35 percent of their portfolio domestically.

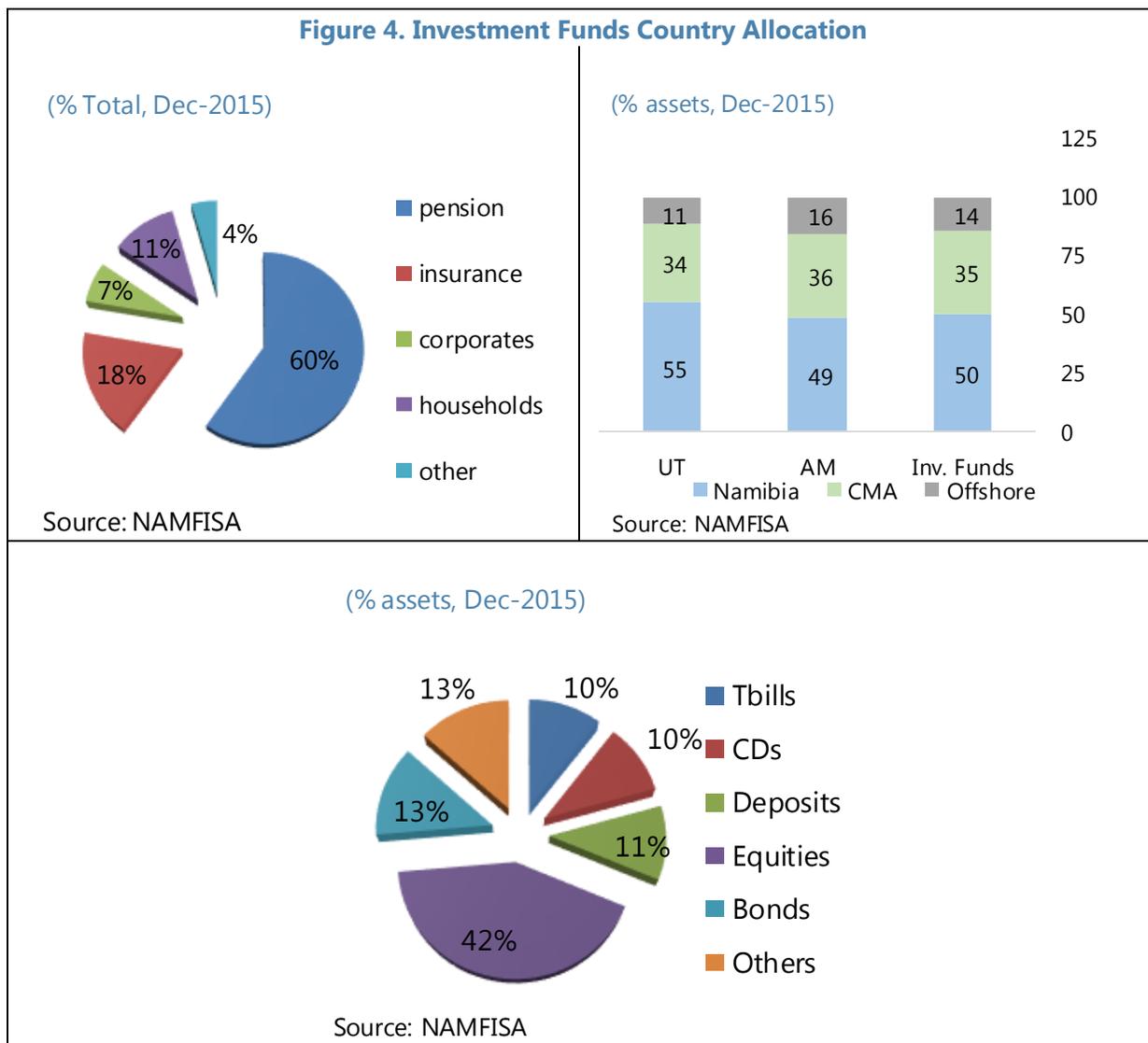
<sup>9</sup> Technically this investment corresponds to the whole CMA region; however, given the relative size of countries and in particular of their capital markets, the investment is mostly in South Africa.

<sup>10</sup> Assuming that investment funds and commercial banks are the major holders of public debt, and since commercial bank's report their holdings of government paper, the residual is presumed to be held by investment funds.

<sup>11</sup> Which roughly implies that markets expect the volatility over the next month to be about 6 percent with a 68 percent probability (if financial returns were normally distributed).

<sup>12</sup> So far, Namibian banks have used existing credit lines with parent banks (both formal and informal), which act therefore as a lender of last resort.

Hence, a shock to investment funds could easily become a liquidity shock for domestic banks, if deposits do not return to the banking system. Moreover, since investment funds typically take correlated actions (herding behavior), they tend to rapidly propagate shocks as they rebalance their portfolios based on past performance (both across asset classes and countries), which could amplify the liquidity problem in the system.



## D. Macro-Financial Vulnerability: Stress Analysis

### 7. Various events could generate redemption shocks for investment funds, which would likely have negative effects on their most liquid assets and, in turn, possibly on banks.

In general, shocks could originate domestically or abroad, involve investments in one or more countries, and in one or more asset classes. However, a shock to Namibia’s investment funds could likely emerge from their exposures to South African equities. Such a shock could be idiosyncratic (e.g., due to political instability in South Africa) or associated with a global re-balancing of risk sentiments towards emerging markets. Also, a redemption shock for investment funds, could emerge after a period of poor performance or if an event suddenly induces a loss of confidence in

these funds. If shocks are large enough, fund managers could be forced to liquidate assets to meet redemptions. Effects could be amplified by first mover incentives, as investors try to rapidly redeem their deposits to avoid sharp losses in their portfolios. If investment funds are forced to fire sale assets, this could further aggravate the shock as it would depress asset prices and possibly induce further outflows. Moreover, the government would also likely experience difficulty to finance itself and might need to pay higher interests or eventually to defer some spending, which could impact GDP growth.

**8. A redemption shock for funds could generate a liquidity shortage for banks which, depending on the size of the shock, could be forced to deleverage.** If investment funds

are subject to large and sustained redemptions, they could withdraw their bank deposits to avoid fire sales of less liquid assets and minimize losses. In principle, even if deposits do not return to the banking system through other means, Namibian banks could absorb some withdrawals as they have ample liquidity (in 2015, liquid assets were 12 percent of monthly average liabilities to the public, compared to a 10 percent

requirement). However, about 70 percent of these assets are holdings of government securities that are relatively illiquid as the domestic secondary market is small (in 2015, it only had a 30 percent turnover). Banks could also absorb shocks using their capital buffers (in 2015, capital was 14 percent of RWA, compared to a CAR of 10 percent). Abstracting from liquidity considerations, currently, banks' liquidity and capital buffers (the difference between current holdings and the minimum liquidity and capital requirements) is estimated to be around 3.8 percent of GDP. Thus, a non-temporary liquidity shock approaching this size, and abstracting from temporary liquidity lines) would create pressures on banks, which would likely take remedial measures to avoid diminishing buffers either by deleveraging or eventually re-capitalizing.<sup>13</sup>

**9. Given the relatively large size of investment funds, a large enough liquidity shock to banks, via fund redemptions, could have significant effects on credit allocation and growth.**

Data limitations (time series for investment funds are only available from 2011 on annual and aggregate basis) prevents us from gauging the probability of large liquidity shocks. However, liquidity and capital buffers of the banking system are equivalent to less than 3 percent of investment funds' assets. Hence, the banking system would have problems if investment funds had net redemptions of less than 3 percent of their assets, assuming they use bank deposits to cope with

**Table 2. Bank's Capital and Liquidity Buffers, Dec- 2015**

	N\$ Millions	% GDP
Qualifying Capital	11,163	7.6
Required Capital	7,832	5.3
Capital Buffer	3,331	2.3
Average Liquid Assets Held	11,332	7.7
Required Liquidity	9,107	6.2
Liquidity Buffer	2,225	1.5
Maximum Allowable Shock 1/	5,556	3.8

1/ Equivalent to 2.8 percent of investment fund's assets

Source: BoN

<sup>13</sup> While this analysis is for the overall banking system, individual banks could face stress with smaller or larger shocks depending on their buffers and exposure to wholesale funding from individual investment funds.

outflows. Admittedly, in the presence of shocks, banks could possibly request short-term liquidity support from their parents or the BoN. However, depending on the duration and severity of the shock and the dependence of individual banks to wholesale funding from investment funds, these options might not be enough and some deleveraging would occur, affecting GDP growth and aggravating bank's problems. As mentioned above, past analysis (SM 15/276) suggests that credit is significantly associated with GDP in the long run, which would in turn aggravate banks' problems in case of stress.

## E. Policy Implications

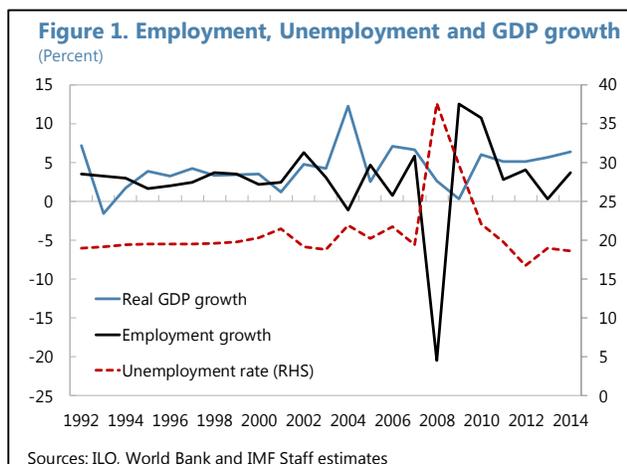
**10. Given their size, foreign exposures, and links, NBFIs in Namibia are macro-critical and the BoN should take the lead in assessing financial stability risks arising from banks and NBFIs linkages.** The financial regulatory architecture with the separation of regulatory functions between the BoN and NAMFISA tends to prevent proper monitoring and assessing of financial stability risks arising from linkages across the financial industry. This financial vulnerability has been identified around the world and regulation is continuously evolving to improve the risk monitoring, risk management, and supervisory frameworks. However, taking corrective actions in Namibia might be even more important given the relative size of investment funds and their large and risky foreign exposures. In particular, to improve the monitoring and assessment of the financial system, the regulatory architecture needs to be improved to provide the BoN with the necessary powers and instruments to assess macro-financial risks and exercise controls for the whole financial sector. Thus, the BoN should take the lead in addressing data and regulatory gaps, to identify early signs of stress and reduce the likelihood that a shock translates into a crisis.

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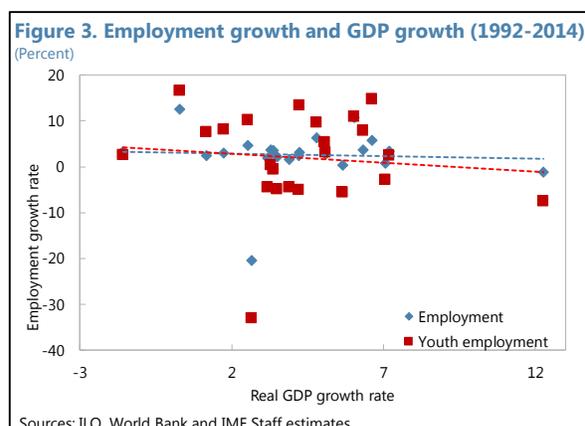
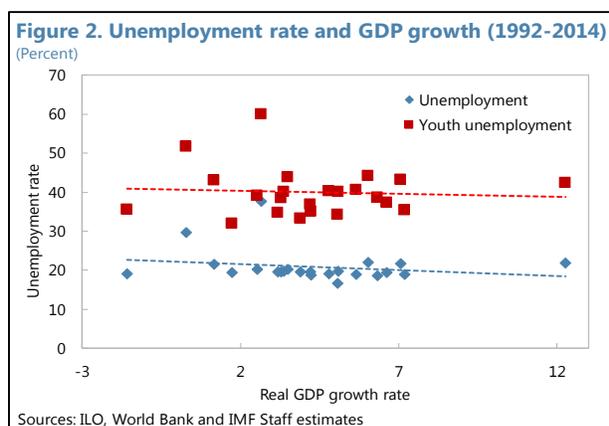
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# ENHANCING THE RESPONSIVENESS OF EMPLOYMENT TO GROWTH IN NAMIBIA<sup>1</sup>

1. **Since independence, Namibia has experienced robust growth, while unemployment has remained stubbornly high.** Since 1992, real GDP growth in Namibia has averaged 4.3 percent, while the unemployment rate has remained persistently high (averaging 21 percent of the labor force).<sup>2</sup> Indeed, employment growth and the unemployment rate have failed to co-move with real GDP growth (Figure 1). A notable exception was during the Global Financial Crisis, when the sharp fall in real GDP growth was accompanied by a fall in employment growth and a pronounced spike in the unemployment rate.<sup>3</sup>



2. **Both the unemployment rate and employment growth have been little responsive to the level of economic activity.** Over 1992–2014, the correlations between unemployment rate and real GDP growth (Figure 2) and between employment growth and real GDP growth (Figure 3) have been very low. This is true also for youth unemployment, which averaged about 40 percent over the period. Econometric analysis confirms the limited inclusiveness of growth in Namibia. Following Furceri (2012), we regress the change in the unemployment rate on real GDP growth, and employment growth on real GDP growth, including a constant and a lag of the dependent variable



<sup>1</sup> Prepared by Giovanni Melina.

<sup>2</sup> The unemployment rate reflects ILO estimates covering the period 1992–2014. The Namibia Statistics Office has been conducting labor force surveys since 2012 and report an unemployment rate in 2014 of about 28 percent.

<sup>3</sup> The asymmetry of the magnitude of the response of unemployment to growth across downturns and booms is observed also in South African data (see Staff Report of the 2016 Article IV Consultation).

among the explanatory variables.<sup>4</sup> These regressions confirm the intuition from the descriptive analysis (Table 1). In particular, they suggest that the coefficient measuring the responsiveness of the unemployment rate to GDP growth—the so-called Okun’s coefficient—is not significantly different from zero, confirming that the Okun’s law does not hold in Namibian data (the coefficient has also the wrong sign, although adding the autoregressive term rectifies at least the sign but not the significance). Moreover, coefficients measuring the employment growth responsiveness to GDP growth display the right (positive) sign (when an autoregressive term is introduced), but are statistically insignificant. In a context like Namibia, where the labor force participation rate has been pretty stable, a low responsiveness of unemployment to growth is almost entirely due to the low responsiveness of employment to growth. Therefore, boosting the elasticity of employment would translate in lower unemployment rates.

**Table 1. Responsiveness of Unemployment and Employment Growth to Real GDP**

	Dependent variables							
	Change in unemployment rate		Change in youth unemployment rate		Employment growth		Youth employment growth	
constant	-0.15 (1.91)	0.57 (2.05)	-0.90 (2.59)	0.90 (2.80)	0.03 (0.03)	0.02 (0.02)	0.03 (0.05)	-0.01 (0.05)
AR(1)		-0.27 (0.21)		-0.39 (0.24)		-0.33 (0.23)		-0.46* (0.24)
RGDP growth	0.03 (0.39)	-0.14 (0.44)	0.25 (0.53)	-0.16 (0.59)	-0.08 (0.51)	0.16 (0.55)	-0.32 (0.93)	0.57 (1.04)
R-squared	0.00	0.07	0.01	0.13	0.00	0.10	0.01	0.17
# of Obs.	23	22	23	22	23	22	23	22

Notes: RGDP is real GDP; AR(1) refers to the lag of the dependent variable; standard errors are in parentheses  
 \*denotes significance at a 10 percent level  
 Sources: IMF staff estimates on World Bank and ILO data

## A. What Explains the Low Responsiveness of Employment to Growth?

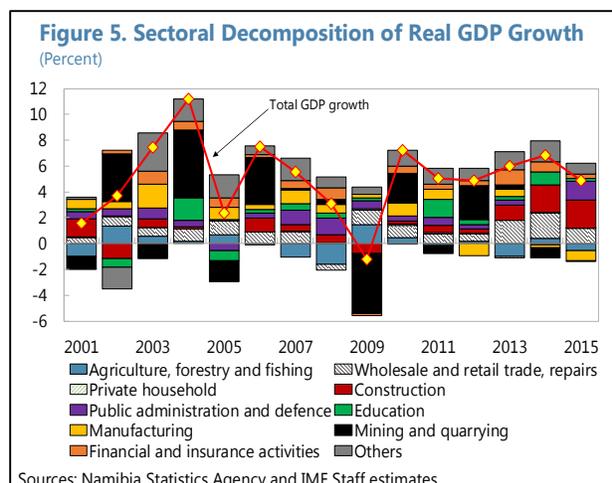
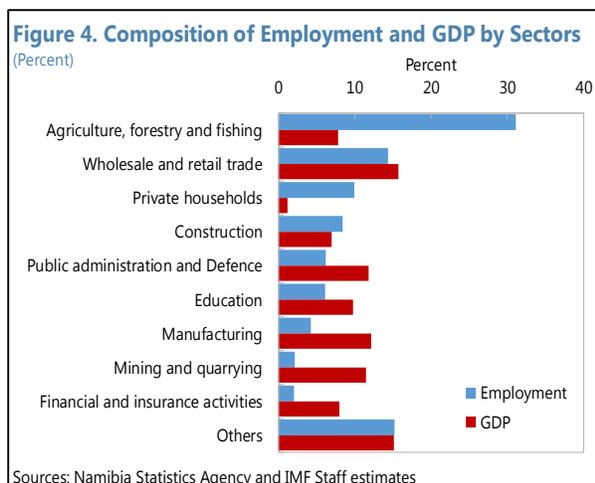
**3. Past trends and international comparisons suggest that the low responsiveness of employment to growth in Namibia may be traced back to a few key factors.** First, over the last decades, the economy has been growing mostly in non-labor intensive sectors. Second, there are significant skill mismatches in the labor market. Finally, compared to other countries, Namibia presents rigidities in the business environment that may have limited the extent to which the labor market and employment respond to changes in economic conditions.

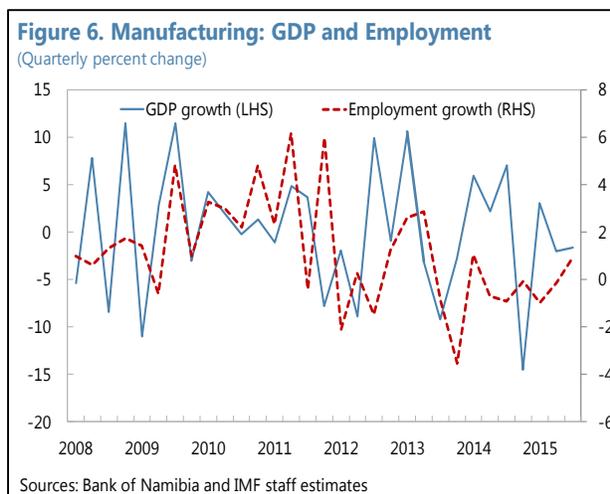
<sup>4</sup> These regressions are meant to formally check whether the Okun’s law holds in Namibian data. The Okun’s law refers to the empirical regularity, usually verified in macroeconomic data, according to which the unemployment rate is negatively correlated to real GDP growth.

**Growth composition and employment**

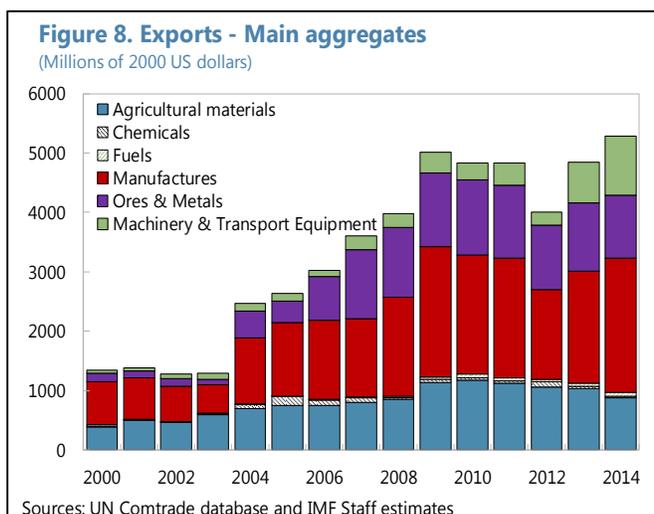
**4. Low-labor intensive sectors have been driving growth in Namibia.** Over the last fifteen years, the mining sector, which represents more than 10 percent of GDP, has had a prominent role in GDP growth but it absorbs only about 2 percent of overall employment and has created very few new jobs. At the same time, the agricultural sector, which represents less than 10 percent of GDP, has had only a minor or negative contribution to growth (Figure 4), but it absorbs more than 30 percent of total employment (Figure 5) and employs the bulk of low-skilled workers. The picture improves when looking at both the trade services (wholesale and retail) and construction sectors. Over the recent years, these sectors have had an increasing role in GDP growth and they have a more balanced proportion between their share of GDP and employment they absorb. Manufacturing still displays an imbalance between GDP and employment shares, but the sector is likely characterized by within-sector labor intensity heterogeneity across various subsectors.

**5. In addition, growth has been strong in sectors showing low employment elasticity to GDP, limiting growth inclusiveness.** While growth tends to occur in low labor-intense sectors, a more interesting question is whether employment in those sectors is responsive to growth, to such an extent to make growth more inclusive. Unfortunately, sectoral employment data are limited and have only been collected since 2012 through three labor force surveys, making time series and elasticity analysis difficult. However, while sectoral employment elasticities to the relevant sector-specific GDP calculated using these data need to be interpreted with caution, data show that such





elasticities vary considerably across sectors.<sup>5</sup> These variations in elasticities suggest that further growth in mining—typically a non-labor intensive sector—and traditional agriculture—which already absorbs a large share of employment (above 30 percent)—are unlikely to generate much employment growth. They also suggest that the recent better growth performance in manufacturing and trade services sectors may lead to job creation as these sectors appear to have higher employment to GDP elasticity. This latter result is confirmed by looking at the elasticities calculated using quarterly survey data collected by the Bank of Namibia from a sample of firms over the period 2008-2015. These series show a substantial degree of co-movement between the rates of growth of GDP and employment in both sectors (Figures 6 and 7). The elasticity of employment to growth calculated using these quarterly series show that in both sectors the elasticity is about 1, i.e., a 1 percent GDP growth in either sector is associated with a 1 percent growth in sectoral employment. In the last 10 years manufacturing has had a more prominent role in Namibian exports boding well for employment (Figure 8), although the sector still represented only about 10 percent of GDP in 2015.

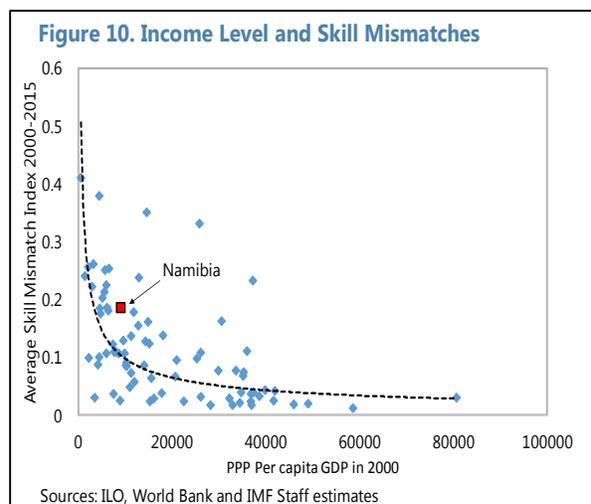
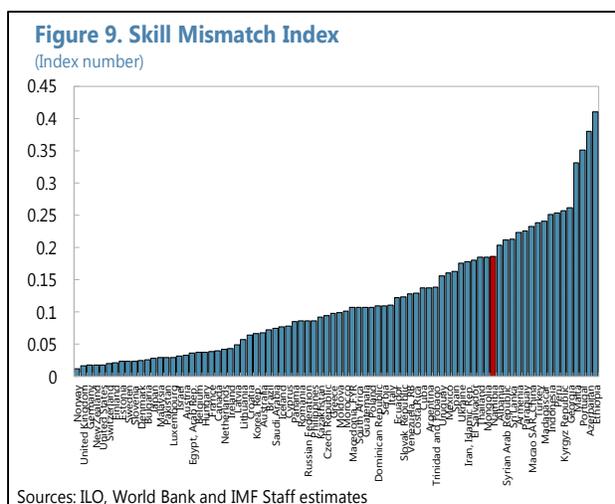


<sup>5</sup> The sectors considered are the following and elasticities are reported in parenthesis: (a) Agriculture, forestry and fishing (-1.87); Mining and quarrying (-1.51); Manufacturing (3.16); Construction (0.47); Wholesale and retail trade (0.97); Financial and insurance activities (0.40); Public administration and defense (1.02); Education (0.49); Private households (2.68); Others (-0.25). Negative elasticities in mining, agriculture, as well as a very big elasticity in manufacturing (above 3) may be due to dynamics specific to the short time period considered. In particular negative elasticities are unlikely to be found when using longer time series.

## Skill mismatches and employment

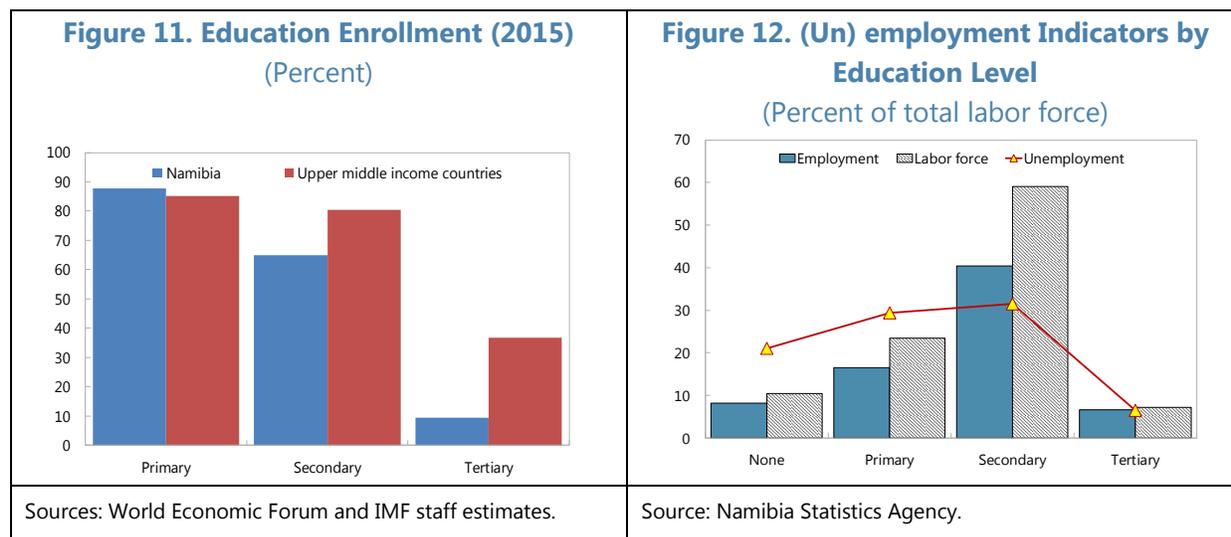
**6. Skill mismatches have been identified in the past as a source of poor employment performance.** Estevao and Tsounta (2011) constructed a skill mismatch index for the U.S. states and showed that that higher skill mismatches in the U.S. states are associated with higher structural unemployment rates. Stepanyan and others (2013) extended Estevao and Tsounta (2011)'s analysis to nine small middle-income countries, including Namibia, and found a strong correlation between skill mismatches and unemployment. In their study, Namibia stands out for particularly high unemployment rates and skill mismatches. Using the same procedure, we construct a skill mismatch index for 82 countries (Appendix A). Then, we use the index to identify where Namibia stands in the broader distribution and examine how skill mismatches affect the elasticity of employment to output.

**7. Namibia has among the largest skill mismatches in the world, with an excess supply of low and semi-skilled workers and low supply of high skilled workers compared to demand.** According to the new skill mismatch indicator constructed by staff, Namibia ranks 66<sup>th</sup> over 82 countries, based on the average of the index over the period 2000–2014 (Figure 9). As the index is a decreasing function of per-capita GDP (Figure 10), Namibia is also among the upper middle income



countries with larger mismatches. The source of the mismatches is to be found primarily in the low educational attainment relative to countries of similar per-capita income level (Figure 11). In particular, while Namibia has a comparable enrolment rate for primary education to the average of upper middle income countries (above 80 percent), the gap widens with higher levels of education, especially tertiary and vocational training. The mismatch between employment and labor force widens going from no education to secondary education, but it dramatically shrinks for tertiary education (Figure 12). Therefore, while the unemployment rate peaks above 30 percent for individuals with secondary education, it dramatically falls to below 10 percent for individuals with tertiary education. Hence, from the labor demand side, growth in semi-skilled sectors such as manufacturing and trade services would likely help absorb part of the excess labor force with secondary education. At the same time, from the labor supply side, an increase in the proportion of labor force with tertiary education or vocational training would likely help meet the increasing

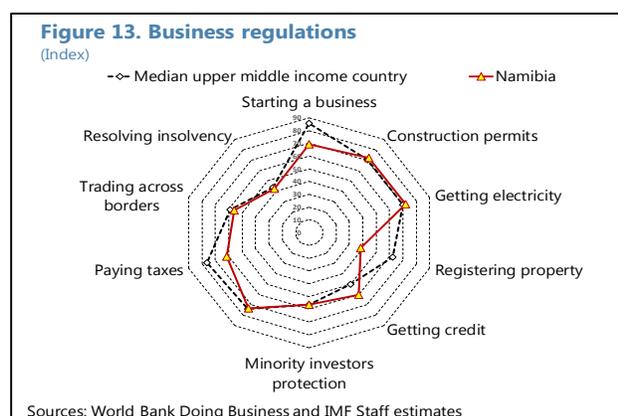
demand for highly-skilled workers. Closing the mismatch would require policies acting both on the supply and demand side.



**Rigidities in the business environment**

**8. Namibia presents several shortcomings in the business environment that potentially constrain job creation.** Namibia ranks below the world median for tax compliance and business regulations (on a 1–10 scale, it ranks 1.01 and 0.22 points below the median, respectively), while it ranks between the world median and the 3<sup>rd</sup> quartile for corruption and licensing restriction.

The country also ranks below the world median for labor market flexibility (based on survey data about *de facto* business practices, on a 1–7 scale, Namibia ranks 1.6 points below the world median).<sup>6</sup> When looking at business regulations, those exhibiting the largest gaps relative to the median upper-middle income country are related to starting businesses, registering property, and ease of paying taxes (Figure 13). A higher score in the business regulations index represents better conditions for enterprise. We show below that structural reforms inducing an improvement in this index would likely strengthen the relationship between growth and employment.



<sup>6</sup> The evidence on rigidities in the labor market is mixed for Namibia. The analysis conducted by the World Bank for the Doing Business index does not reveal severe rigidities in the legal labor market regulations. In the survey-based index for labor market flexibility produced by the World Economic Forum Namibia scores between South Africa and the average for upper-middle-income countries. Over the past 5 years, on a scale between 1–7, Namibia scored about 3.2 while South Africa scored 2.3 on average.

## B. Towards More Inclusive Growth: Potential Gains from Structural Reforms

### 9. Cross-country analyses suggest that a better business environment and lower skill mismatches have the potential to increase the responsiveness of employment to growth.

Recent panel regressions on a large number of countries by An and others (2016) and Ball and others (2016) find evidence that a more positive business environment—proxied by a number of indicators—and labor market flexibility are positively correlated with the employment-to-output elasticity. As Namibia has significant gaps in most of the business environment indicators (Table 2), the country has large margins to make stride on some of the variables that more affect the responsiveness of employment to growth. Conducting a similar regression using the skill mismatch index discussed above suggests that reducing skill mismatches can also play an important role to improve the employment elasticity to GDP (Table 2). The negative coefficient associated to the skill mismatch index indicates that greater skill mismatches make it difficult for labor demand and supply to meet and clear the market, and create a disconnection between growth and employment creation. On a range between 0.01 and 0.41, Namibia scores well above median (0.19) in the skill mismatch index (i.e., large skill mismatch). Given the role of skill matching to improve the elasticity of employment to growth, closing this gap, Namibia has the potential to significantly improve the responsiveness of employment to growth.

**Table 2. Business Environment Indicators and Predicted Increase in the Employment-to-Output Elasticity in Response to their Improvement**

	(1)	(2)	(3)	(4)	(5)	(6)
	Labor market flexibility	Corruption	Licensing restrictions	Tax compliance	Business regulations	Skill mismatch index
<b>World Statistics</b>						
1st quartile	3.98	3.58	7.58	6.41	6.08	0.04
Median	4.79	4.48	8.47	7.49	6.36	0.10
3rd quartile	5.41	6.25	9.21	8.22	6.83	0.18
<b>Namibia</b>	<b>3.19</b>	<b>4.87</b>	<b>8.93</b>	<b>6.48</b>	<b>6.14</b>	<b>0.19</b>
Distance from median	1.60	-0.38	-0.46	1.01	0.22	0.09
<b>Change in employment-to-output elasticity associated to a unit increase in each index:</b>						
	0.05**	0.09***	0.07**	0.06***	0.17***	-1.68***

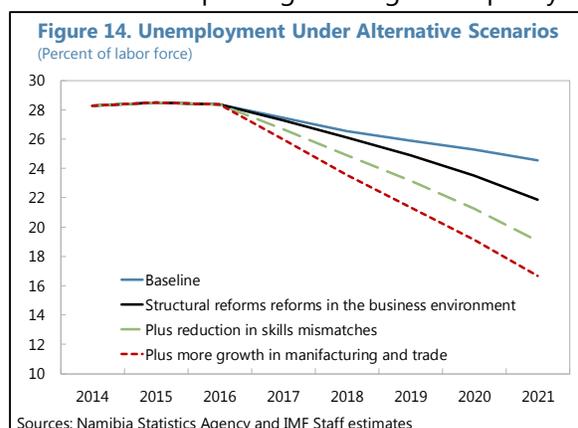
Notes: A increase in indices (1)-(5) indicates an improvement in business conditions; an increase in index (6) denotes greater skill mismatches. \*\* and \*\*\* denote significance at 0.05 and 0.01 levels, respectively.

Sources: An, Ghazi and Gonzalez Prieto (2016); Ball, Furceri, Leigh and Loungani (2016); Fraser Institute; World Economic Forum and IMF staff estimates.

### 10. Structural reforms to bring Namibia's skill mismatches and business environment indicators to the world median have the potential to place unemployment on a steady declining path.

As an illustration, we assume that the labor force grows with population (growing by 2.7 percent as in the past) and that labor force participation rate for the population over 15 years of age remains at of 70 percent, in line with the recent Namibia's experience). Given labor force growth, we simulate employment growth in each sector of the economy using the average sectoral employment-to-GDP elasticities from the latest labor surveys. The difference between the assumed labor force and the sum of the simulated sectoral employment levels yields the simulated level of unemployment, which we plot as a fraction of the labor force. Under our baseline, the unemployment rate would slowly decline over the next five years from about 28 percent in 2015 to about 24 percent in 2021 (Figure 14, blue line).

- Business environment.** To measure the effects of structural reforms in the business environment, we assume that the gap from the world median in the business regulations indicator is closed and that the employment-to-output elasticities in all sectors uniformly increase by the amount predicted by the panel regression (0.04). If this is the case, structural reforms would boost employment (keeping growth constant) and results into unemployment to decline to 21.5 percent by 2021 (Figure 14). Policies to improve the business environment with positive effect on labor elasticity include simplifying regulations for registering property and starting businesses.
- Skill mismatches.** A reduction in the skill mismatch index to its median value (that (alone) would cause a predicted increase in the elasticities by 0.14) would result into a further decline in the unemployment rate, which will decline to 19 percent in 2021 (Figure 14). Policies to reduce the skill mismatch index would include: improving coverage and quality of higher education, updating curricula, and providing incentives to transition to tertiary education and vocational training, where the mismatch appears larger.<sup>7</sup> Moreover, improving the quality of primary and junior secondary education would facilitate the transition to senior secondary and tertiary education; in addition, strengthening programs to acquire on-job training would help entering the labor market.
- Other policies.** Lastly, the government is pursuing, through different means, a policy to support growth in the manufacturing sector. If over the 2017-2021 period, growth in manufacturing and trade services is, for example, 5 percent points higher than baseline, the unemployment rate further decline by another 3 percentage points to around 16 percent by 2021 (red line).



**11. In sum, structural reforms have the potential of strengthening the nexus between growth and employment in Namibia.** While recent growth trends in more labor-intensive sectors such as manufacturing and trade services have the potential to give a significant contribution to job creation, economic policy may play an important role in the process. In particular, structural reforms closing gaps in business regulations to facilitate the creation of new businesses hiring especially semi-skilled workers could have a non-negligible impact on job creation. However, the most eloquent message that stands out from this analysis is that reducing skill-mismatches, through an improvement of the coverage and quality of education and vocational training, would play a central part in bringing the unemployment rate on a declining path.

<sup>7</sup> Recent studies (e.g., Asian Development Bank (2015)) find that in presence of skill mismatches, technical and vocational education and training in national education planning and budgeting lead to significant job creation (e.g., in Germany, Korea and Singapore).

## Appendix I. Skill Mismatch Index

**12.** Using the procedure of Estevao and Tsounta (2011), we computed the Skill Mismatch Index (SMI) for a large number of countries in the world (Figure 9). Given a set of skills, the index is a measure of the distance between the percent of the labor force with a given level of skills (skill level supply) and the proportion of employees with the same level of skills (skill level demand). We divide each country's labor force and sectors into three categories (i) low-skilled (less than secondary education), (ii) semi-skilled (with secondary education), and (iii) high-skilled (with more than secondary education).<sup>8</sup> The index is given by the sum of the squared distances for the three skill levels for each country and over time:

$$SMI_{it} = \sum_{j=1}^3 (S_{ijt} - M_{ijt})^2,$$

where  $j$  = skill level,  $S_{ijt}$  = percent of labor force with skill level  $j$  at time  $t$  in country  $i$ , and  $M_{ijt}$  = percent of employees with skill level  $j$  and time  $t$  in country  $i$ .

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<sup>8</sup> Based on the analysis on skill level intensity of Estevao and Tsounta (2011) we divide sectors as follows. Low-skilled sectors are (i) mining and logging and (ii) construction; semi-skilled sectors are (i) manufacturing, (ii) trade, transportation and utilities, (iii) leisure and hospitality, (iv) other services; high-skilled sectors are (i) information, (ii) financial activities, (iii) education and health care, (iv) professional and business services, and (v) government.

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