

References

International Monetary Fund, 2011, "Assessing Reserve Adequacy," IMF Policy Paper, February (Washington: International Monetary Fund).

International Monetary Fund, 2012, "Assessing Reserves Adequacy in Jordan", IMF Country Report No. 12/120, (Washington: International Monetary Fund).

GROWTH AND DIVERSIFICATION IN BHUTAN¹

Bhutan has experienced rapid growth in the recent past, though accompanied by greater volatility in the hydropower sector. Diversification of the economy would help to sustain high growth and limit potentially higher volatility as the hydropower sector expands. Bhutan's exports have shown a lack of diversification and its export basket has a falling share in world exports. Required policy measures include addressing key structural deficiencies such as a shortage of skilled labor and access to finance, as well as encouragement of niche sectors such as tourism, agri-business, and energy intensive activities that could take advantage of access to cheap and clean power.

A. Introduction

1. As a small, mountainous, and landlocked country, endowed with abundant hydro-power potential, Bhutan faces a unique mix of development challenges and opportunities. It benefits from its proximity to India, particularly in the development and export of hydropower, but it is also subject to volatile hydropower cycles that raise challenges for macroeconomic stability and management. In addition, it is heavily import dependent and has a small export base, with consequences for its external balance. Moreover, given that electricity export prices are fixed per unit, export revenues are set to decline as a share of GDP over time.

2. Cross-country research suggests a positive link between trade and real sector diversification, and macroeconomic outcomes. Real sector diversification, by channeling resources from more volatile (and correlated) sectors to less volatile sectors—such as from mining and agriculture to manufacturing— can increase stability. Trade diversification, in both partners and products, can dampen the impact of fluctuations in partner countries and volatility in terms of trade (to the extent that such fluctuations are uncorrelated across partners and product prices). It is estimated that diversification episodes are associated with a 17 percent reduction in output growth volatility; among LICs, the reduction in volatility is as high as 40 percent. The evidence also suggests that diversification episodes and growth accelerations are correlated.²

3. Bhutan is likely to witness multiple growth spurts associated with construction of large hydropower projects and subsequent jumps in electricity generation. Several large projects that will more than double current installed capacity are slated to begin generating power by 2017–18. However, there are pitfalls associated with growth deriving from a single sector, such as Dutch disease type effects that could negatively impact the relatively small export base, heightened volatility, and risks that accompany large hydropower projects, such as delays and cost escalations.

¹ Prepared by Adil Mohommad (APD).

² For details, please refer to IMF (2012).

Moreover, the hydropower sector is known to generate little employment, mostly using expatriate labor from India.³ Therefore, diversifying growth is an important policy priority for Bhutan.

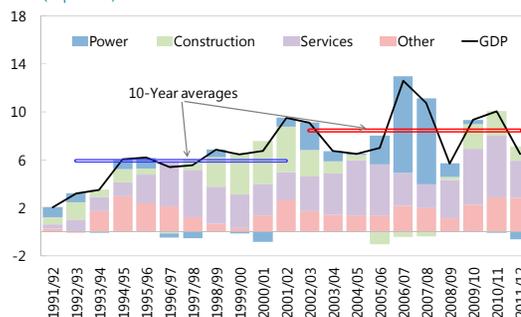
4. This chapter is organized as follows: Section B discusses trends in the domestic economy, including growth patterns, sector shares over time, and the impact of the hydropower sector. Section C discusses export diversification trends, and section D discusses policy options in light of evidence on Bhutan's structural needs and priorities.

B. Domestic Economy and Growth

5. Over the past two decades, Bhutan has shifted to a higher growth trajectory, albeit a more volatile one. The average growth rate was about 6 percent during 1993–2002, increasing to 8.7 percent on average over the next ten years. The commissioning of the 1,020 MW Tala hydropower project (the largest to date) in 2006/07 drove up GDP growth to nearly 13 percent, and 10 percent the year after. Prior to the commission of Tala, surging construction activity also contributed to GDP growth. The contribution of the power sector to growth fell dramatically as Tala reached its peak production capacity. Also evident is the robust contribution of the services sector after 1996/97 to overall growth.

Contribution to GDP Growth

(In percent)

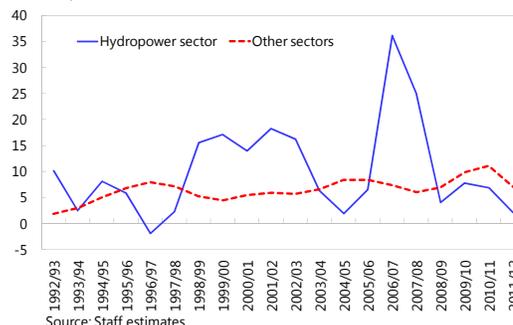


Sources: Royal Monetary Authority of Bhutan; and IMF Staff Estimates.

6. At the same time, growth has become much more volatile. In terms of volatility, although the standard deviation of growth increased from 1.8 to 2.2 percentage points over the two 10-year periods, the coefficient of variation actually declined from 0.3 to 0.25 in the second half given the much higher average growth rate. The stabilizing role is played by the non-hydropower real sector. Estimated hydropower GDP growth⁴ appears more volatile than non-hydro related activity; moreover the coefficient of variation of non-hydro growth has declined from 0.4 to 0.2 between the two decades, whereas that of hydro-GDP has increased from 0.8 to 1.

Hydro vs. Non-hydro GDP Growth

(In percent)



Source: Staff estimates.

³ See Kojo (2009).

⁴ Hydro GDP growth is estimated as the weighted sum of construction and electricity sector growth. This is an indicative estimate as there are spillovers from the hydro sector, particularly during the construction phase, on to other sectors of the economy. However, we lack sufficient data to estimate growth attributable directly and indirectly to the hydropower sector.

7. The structure of the economy shows steady transition away from agriculture and towards manufacturing and services. Over the past 30 years, the share of agriculture has declined steadily from nearly 60 percent of GDP in 1980 to below 20 percent in 2011. The share of industry and services has steadily risen in the meantime. Within the industrial sector, electricity generation and construction activity account for nearly three quarters of industrial GDP, while in the services sector, government-related services dominate (Figure 1 in Appendix). Agriculture still employs a significant share (62 percent) of the workforce, with services in second place with 29 percent and industries with 9 percent.

8. In comparison with other low- and lower-middle-income countries, Bhutan's economic structure compares favorably with its peer group, with the relatively large share of income generated in the non-agricultural sector. However, the share of employment in agriculture remains large. Also, low productivity in agriculture raises the possibility of high levels of under-employment or disguised unemployment, despite the low official overall unemployment rate. Moreover, there is also a skills mismatch in the non-agricultural sector which has been identified as a key impediment to private sector development.

C. Export Diversification

9. In the medium term, correcting the wide trade imbalance is of vital importance, given that consumption levels are likely to rise and external assistance will fall with increasing per capita incomes. As well, servicing hydropower related debt will absorb a part of the revenues from exporting electricity (although costs of repayment have been worked into the negotiated tariffs for projects under construction). While hydroelectric exports are likely to remain a key source of export revenue, diversifying the export base will be important for these reasons.

10. The trends in export diversification are examined using various measures from the UN Comtrade database (albeit with data gaps in 1994–97 and 2000–04). Table 1 looks at the evolution of Bhutan's top 7 exports in 1991 accounting for 90 percent of exports. Two decades ago, the export basket had a large share of agricultural and forestry goods, including fruits and vegetables, wood, and wood products, accounting for more than a third of total exports. Over time, the share of these 4 products has fallen around 5 percent. In addition, the share of non-metallic mineral products (largely mining related) has also dropped significantly. Barring electricity, all other goods have dropped in their share of total exports, to the extent that these 5 goods make up now make less than half of total exports, compared to 90 percent in 1991. Goods that have taken their place include ferro-alloys, non-ferrous metals, miscellaneous manufactured goods and crude fertilizers and other crude material.

Table 1. Share of Selected Goods in Exports 1991 Onwards (%)

	1991	1999	2011
Electric current	26.9	40.5	31.1
Inorganic chemicals	19.6	10.8	4.8
Cork and wood manufactures (excl.furniture)	11.1	4.5	0.9
Vegetables and fruit	11.0	8.5	3.1
Non-metallic mineral manufactures	10.1	10.9	3.9
Cork and wood	6.7	1.6	0.1
Coffee,tea,cocoa,spices,manufacture	5.0	1.2	1.3
Share in total exports	90.4	78.0	45.3

Source: UN Comtrade Database.

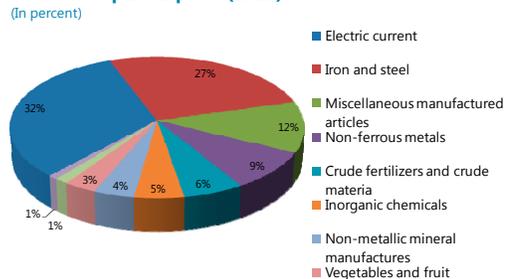
11. Since the commissioning of the Tala hydropower project in 2006, the extent of diversification in Bhutan’s exports appears to have declined.

Looking more closely at the data, it appears that active export lines appear to have gradually risen from the early 1990s until 2005, but have fallen in subsequent years. However, there is a notable overall increase between 1991 and 2011. Similarly, the Herfindahl index, that provides a measure of concentration based on shares in total exports, also suggests concentration declined (lower values showing more diversification) coinciding with the peak of active export lines, only to reverse in the late 2000s with increased electricity exports (and possibly due to fewer export lines). Overall, between 1991 and 2011, the Herfindahl index suggests that export shares may have become more concentrated.

12. The episode of diversification seen between 1999–2005 is associated with new product lines.

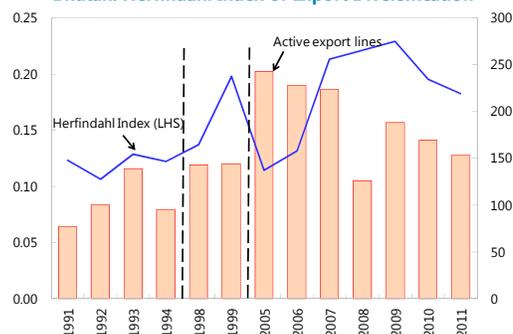
In contrast, the slight increase in diversification observed recently can be attributed to a more even distribution of shares within active product lines, even as the number of product lines has declined. The Theil index decomposes export diversification into an intensive margin (the degree of concentration in shares of active export lines) and an extensive margin (the emergence of new export lines) where lower values signify greater diversification. Cross-country evidence suggests that diversification is mostly driven by changes at the extensive margin, particularly for LICs with narrow trade structures⁵. While the experience up to 2005 would appear to conform to this pattern, the presence of a large hydropower export sector in Bhutan, including sizeable prospective electricity exports to India in the medium to long term imply that the pattern of increasing concentration is likely to continue, in the absence of measures to diversify the export base.

Share of Top 10 Exports (2011)

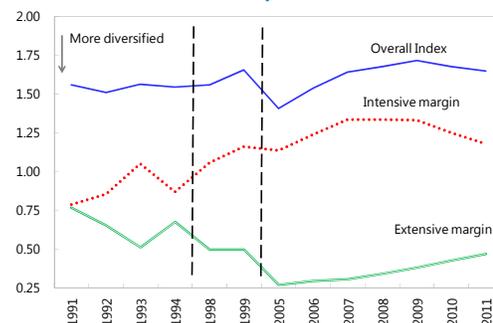


Source: UN Comtrade database. Items account for more than 95 percent of total exports.

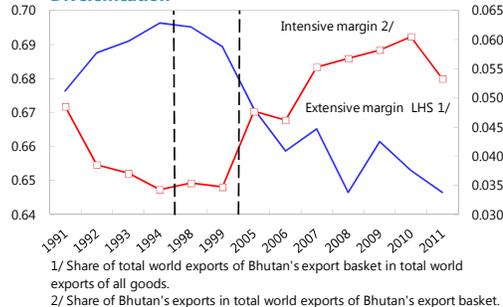
Bhutan: Herfindahl Index of Export Diversification



Bhutan: Theil Index of Export Diversification



Bhutan: Hummels-Klenow Margin of Export Diversification



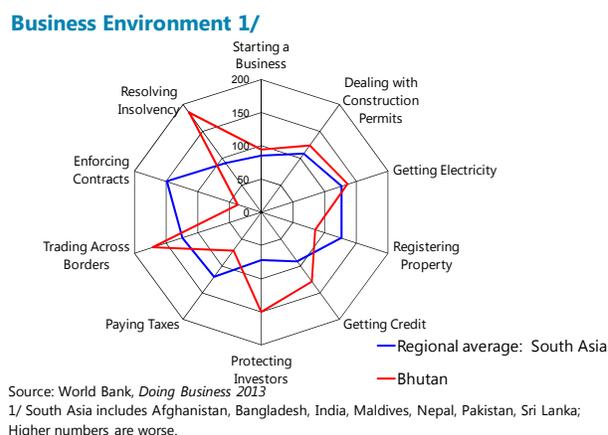
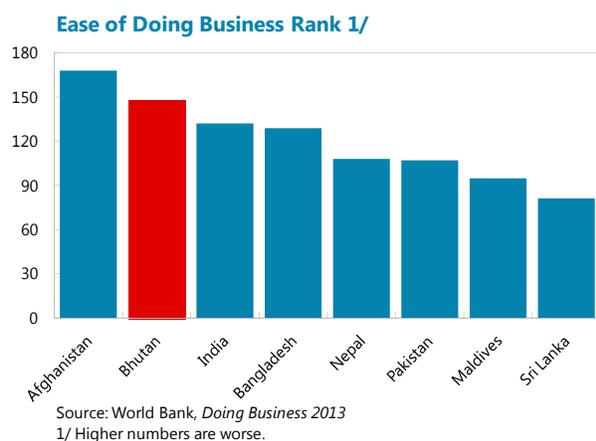
1/ Share of total world exports of Bhutan’s export basket in total world exports of all goods.
2/ Share of Bhutan’s exports in total world exports of Bhutan’s export basket.

⁵ However, trade growth is primarily driven by the intensive margin; see Cadot et. al, 2012.

13. Another useful perspective is provided by looking at the Hummels-Klenow index. The intensive margin (IM) measures the share of a country’s export basket in total world exports of that basket. The extensive margin (EM) measures the share of total world exports of this basket in total world exports of all goods. IM is therefore a measure of a country’s market share, whereas EM measures the share of the basket; other things equal, it is preferable to have an export basket that has a rising share in world exports. While Bhutan’s exports are known to be small, the IM index (share in the basket constituted by its exports) was rising over time, barring a decline in 2011. However, it is also evident from the EM index that the export share of this basket of goods in total world exports is declining over time, and is quite small. Overall, this could be described as being a “small fish in a shrinking pond”; not only is Bhutan’s share in world trade quite small, it is a small exporter of the commodities in its exports basket.

D. Policy Options

14. In this section we discuss options for growth diversification and areas of structural reforms that would assist in achieving this objective. The preceding analysis revealed that employment generation out of the agricultural sector has been low, and that export diversification has not increased over time, even though traditional primary exports have been replaced by metals and manufactured goods, along with electricity, as top export earners. Generating more employment and diversifying the economy are inter-linked as they would rely on developing Bhutan’s private sector. Various business and investment climate surveys of Bhutanese firms shed light on the main structural issues that need to be addressed in order to achieve this desired transformation.

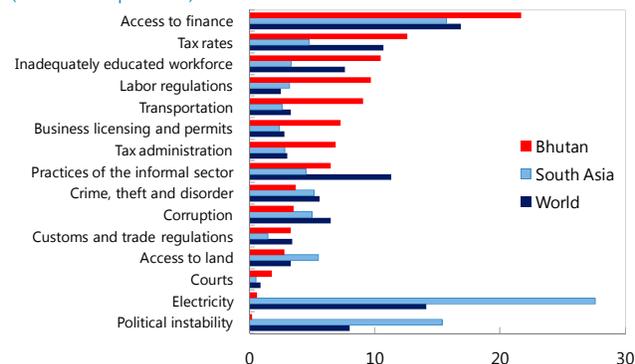


15. Relative to its regional peers, Bhutan ranks low in terms of ease of doing business, and its rank has slipped from 142 in 2012 to 148 in 2013. Along several dimensions, its rank is lower than the average for South Asian countries. In particular, investor protection, resolving insolvency, trading across borders, and obtaining credit appear to be lagging areas. In terms of infrastructure needs, the World Bank Investment Climate Assessment (2010) shows that land and transportation are among key problems faced by firms.

16. The 2009 Enterprise Survey enables us to identify key problem areas perceived by firms.

A fifth of surveyed firms reported access to finance as a significant constraint, along with several labor-related issues including inadequately skilled workforce. The Investment Climate Survey also notes difficulties in importing skilled workers as an additional labor market constraint. Transportation and tax related issues are other perceived major constraints. In comparison with South Asia and the world, Bhutanese firms seem to enjoy a high degree of political stability and easy access to electricity, the latter being a major constraint in other South Asian economies.

Perceived Constraints of Private Sector Firms
(Percent of respondents)



Source: IFC - World Bank Enterprise Survey, 2009.

17. Thus, improving firms' access to finance and enhancing the skills of the workforce and matching private sector labor requirements may be useful policy actions. Although the education levels of the workforce rank well relative to other countries in the region,⁶ the mismatch of skills and high unemployment among youth may prove to be major hurdles for growth and development of the private sector. Moreover, low wage work/underemployment may also be quite high: 30 percent of employed men and 70 percent of employed women attempted to look for additional jobs. Youth unemployment is as high as 8 percent for males and 7 percent for females in the age group of 20–24, and is generally high in the age-groups of 15–29 compared to the overall rate of 2.1 percent.⁷

18. Addressing these structural issues would help to boost more rapid development of the private sector in Bhutan. In addition, it may also benefit from developing certain niche areas in which it has a comparative advantage. These may include tourism, certain high value agricultural commodities and processed foods, electricity-intensive industries that could take advantage of the availability of cheap power, and information and communication technology (ICT)-related industries that may benefit from the relatively well educated labor force.

19. Tourism has the potential to emerge as a major revenue earner for Bhutan. Estimates by authorities place the GDP contribution of the "tourism sector" at around 6 percent of GDP (see Figure 2 in Appendix), quite low in comparison with other countries with significant tourism

⁶ 40 percent of workers are estimated to have completed secondary schooling, while 15 percent had university education or higher. In comparison, India (2004) only had 16 percent of population aged 15 or higher with secondary education, and just 5.5 percent had higher degrees (World Bank, 2010).

⁷ See Bhutan Labour Force Survey Report (2012).

revenues.⁸ The number of arrivals is small (100,000 in 2012), and there are plans to increase it gradually to 200,000 by 2018. In terms of earnings per tourist, Bhutan ranks somewhat below the mean level of expenditure per tourist, taking into account the smaller size of the country.⁹ This may indicate scope to increase tourism earnings by promoting more high-value tourism and by increasing the number of tourists.

20. The key challenges facing development of tourism are the seasonality on account of the nature of tourism, and inadequate infrastructure. Currently, tourism in Bhutan is centered on cultural events that occur at in the second and fourth quarter of the year. Thus, capacity lies idle in intervening periods and tourism remains concentrated in western Bhutan where these activities are centered. Moreover, geographical access is limited to a single airport in the west with a single operating airline and accompanying capacity constraints. The development of tourism must also accompany diversification and expansion of the domestic production base. At present, a large proportion of tourism revenue leaks out in imports; according to authorities' estimates, only \$65 out of the \$250 daily tourism royalty is retained.

21. Some measures have been taken recently to improve the situation, such as introducing more flights, offering royalty-free hotel stays, and offering tax holidays to relatively under-developed tourism regions. The Royal Institute for Tourism and Hospitality was established in 2010, to help standardize and quality control the hospitality sector. Finally, with expended credit card use facilities and the spread of internet, it may become easier to attract more high-value tourists throughout the year. In the medium term, the tourism sector can be boosted further by promoting more nature based and "wellness" based tourism in the country.

E. Conclusions

22. While growth has increased appreciably in the last decade, Bhutan's economy is subject to higher volatility from the hydropower sector, and has so far been unable to generate adequate employment in the manufacturing and services sectors. Its export basket has not well diversified and its share in total world exports is steadily declining.

23. Given the positive relationship between diversification and macroeconomic stability and growth, Bhutan should continue to make efforts to encourage private sector development including with a view to diversifying its exports. Some key areas of improvement are (i) access to finance and (ii) labor market issues including skill enhancement and reducing youth unemployment.

⁸ Since tourism overlaps several domestic sectors including transport, communication, hotels and restaurants etc., its contribution to GDP is difficult to measure accurately. However, the Tourism Council of Bhutan is implementing Tourism Satellite Accounting (TSA) along with the National Statistics Board, which is still work in progress.

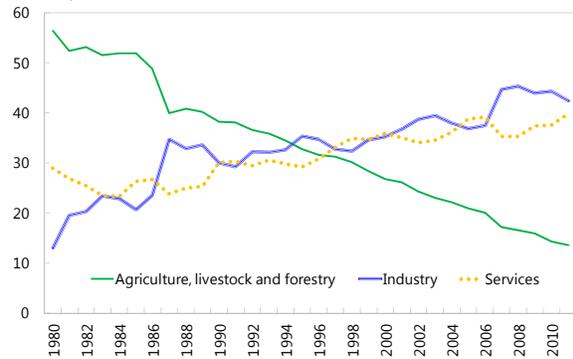
⁹ From a set of 125 countries for whom data on tourist arrivals and tourism spending is available (for 2011) from UNWTO, we consider a smaller set of 63 countries with arrivals below the all-country median, given Bhutan's small size.

24. Bhutan is in a good position to utilize abundant and cheap power to encourage the growth of certain industries, particularly energy intensive manufacturing, tourism, niche agricultural products, and services sectors including tourism. Channeling the earnings from exports of electricity into addressing the structural challenges highlighted above would help Bhutan maximize the growth potential of its hydropower resources.

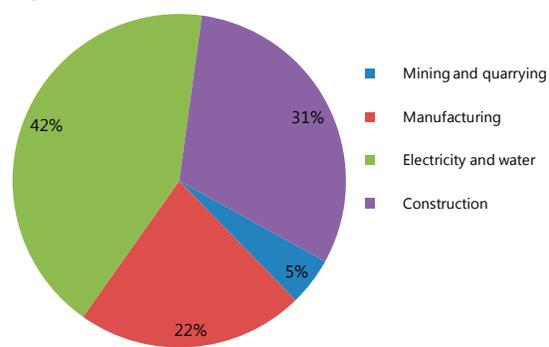
Appendix

Figure 1. Sectoral GDP and Employment

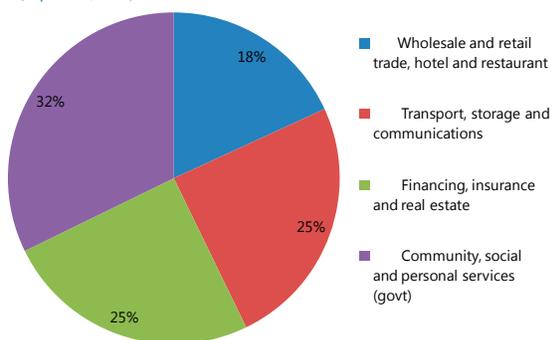
Sector Shares in GDP
(In percent)



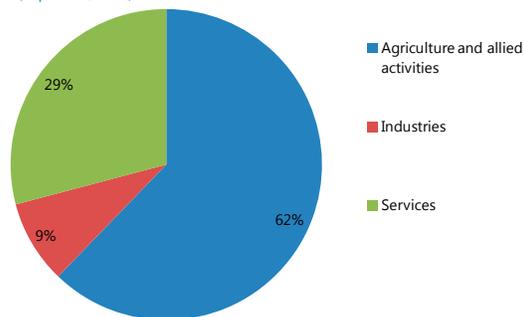
Share in Industrial Sector
(In percent; 2011)



Share in Services Sector
(In percent; 2011)

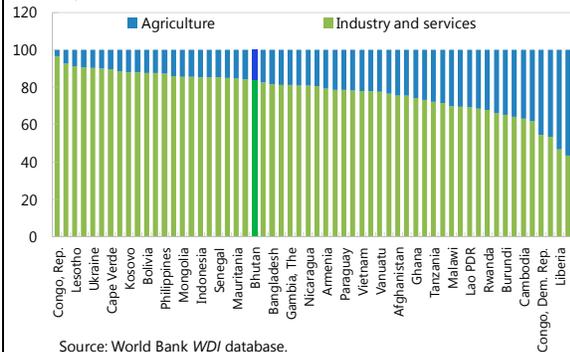


Share in Employment
(In percent; 2012)



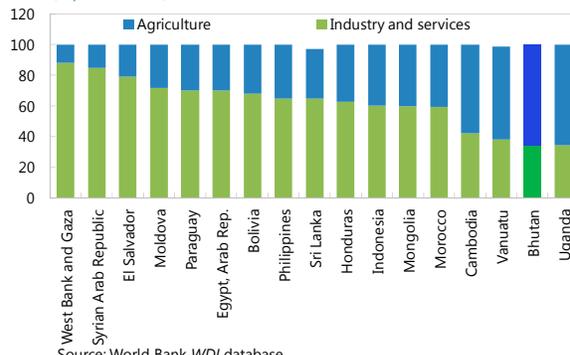
Source: Bhutan Labour Force Survey Report, 2012.

Share in GDP
(In percent; 2011)



Source: World Bank WDI database.

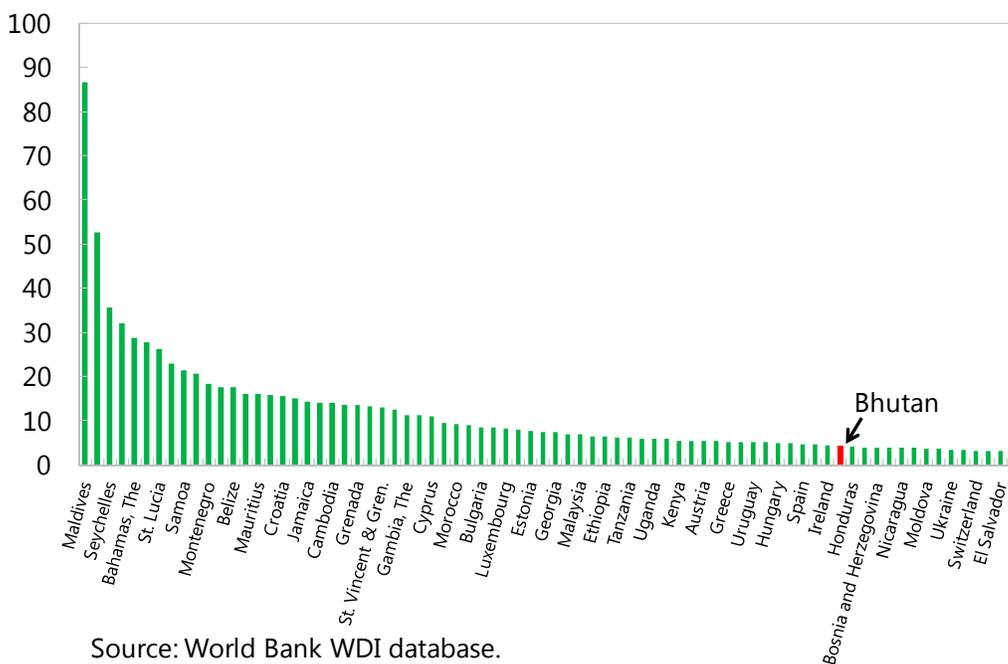
Share in Employment
(In percent; 2009)



Source: World Bank WDI database.

Figure 2. Tourism Earnings

Tourism Revenues Share in GDP (2011)



Expenditure Per Tourist Arrival

(In US dollars, 2011)

