

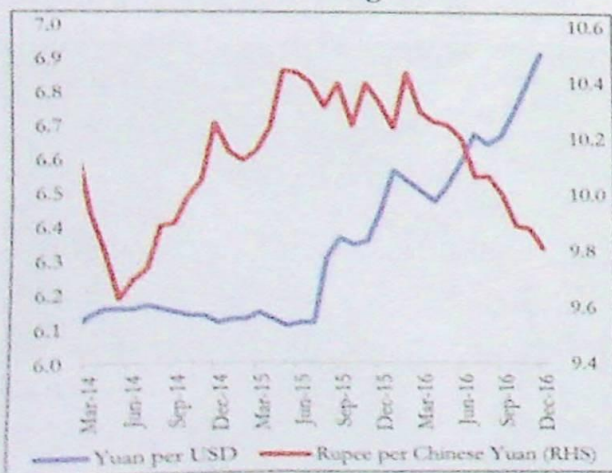
trading opportunities are becoming scarcer. As discussed in Box 2, the world export-GDP ratio has declined since 2011, and going forward a sharp rise in the dollar is expected with a corresponding decline in the currencies of India's competitors, notably China and Vietnam. Already, since July 2015, the yuan has depreciated about 11.6 percent (December 2016 over July 2015) against the dollar and as a consequence the rupee has appreciated by 6 percent against the yuan (Figure 19); the compulsions of delaying its rebalancing strategy might lead to a weak currency policy going forward, especially if there are continuous pressures for capital outflows (see Economic Survey, 2016, Box 1).

1.84 Given India's need for exports to sustain a healthy growth rate, it is important to track India's competitiveness.

1.85 A second reason to review India's competitiveness is the rise of countries such as Vietnam, Bangladesh, and the Philippines that compete with India across a range of manufacturing and services.

1.86 Has India maintained exchange rate competitiveness and what should it do going forward?

Figure 19. Yuan-Dollar and Rupee-Yuan Bilateral Exchange Rates

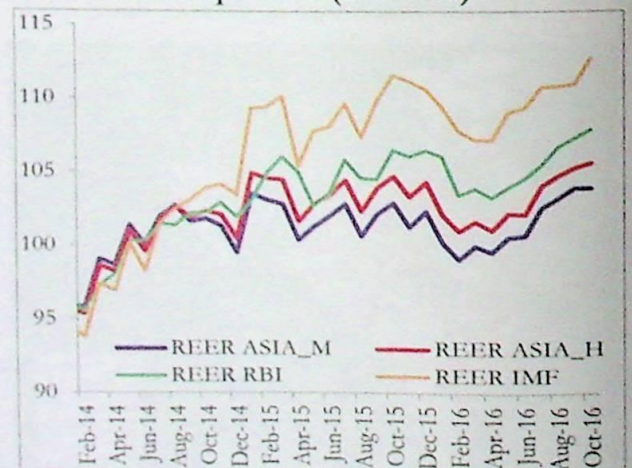


Source: RBI.

1.87 A simple look at the indices of real effective exchange rates suggests that since the crisis of 2013, India's rupee has appreciated by 19.4 percent (October 2016 over Jan 2014) according to the IMF's measure, and 12.0 percent according to the RBI's measure. Both these indices could be potentially misleading. The RBI's measure for example assigns an unusually high weight to the United Arab Emirates as it is a major source of India's oil imports, and a transshipment point for India's exports. But little of this trade has to do with competitiveness. More generally, both the RBI and the IMF look at overall trade rather than just trade in manufactures, or even more appropriately for some policy purposes, labor-intensive manufacturing. As a result, heavy weight is given to the euro, even though it is really Asian countries, not Europe, that are India's main competitors.

1.88 Accordingly, we construct a new real exchange rate index that focusses on India's manufacturing competitors. Essentially, we give a higher weight to those countries that have become highly competitive in manufacturing since the Global Financial Crisis, measured by their change in global export market share. The details of the index construction are provided in Appendix 1 but here we highlight the findings. Figure 20 shows the IMF and

Figure 20. Real Effective Exchange Rate Comparisons (2014=100)



Source: RBI.



RBI (36-currency) indices against two others that we have constructed. In one (REER-ASIA-M) we given moderately high weight, and in a second (REER-ASIA-H) significantly greater weight, to India's competitors (China, Vietnam, the Philippines) that have gained market share since 2010.

1.89 The surprising finding is that the IMF and RBI indices overstate the rupee's appreciation since 2014, largely because they give such a large weight to the euro, which has been exceptionally weak. When the rupee is compared mainly to the comparatively stronger Asian currencies both REER-ASIA-M and REER-ASIA-H show the loss of competitiveness has been much less, 8.3 percent and 10.4 percent respectively (October 2016 over January 2014).

1.90 In other words, India has managed to maintain export competitiveness despite capital inflows and inflation that has been greater than in trading partners. Reflecting this, India's global market share in manufacturing exports has risen between 2010 and 2015.

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### C. Trade Policy

1.92 The environment for global trade policy has probably undergone a paradigm shift in the aftermath of Brexit and the US elections. These are likely to be exacerbated by macro-economic developments in the United States, and in particular the sharp rise in the dollar that is already under way: since November 8, 2016 the dollar has appreciated by 5.3 percent by end December before recovering to 3.1 percent in January 2017 in nominal terms against an index of partner countries. The history of US trade policy is clear that the most protectionist phase (mid to late 1980s) coincided with the sharp rise in the dollar in the wake of the tightening of monetary and relaxation of fiscal policy in that period.

1.93 At a time of a possible resurgence of protectionist pressures and India's need for open markets abroad to underpin rapid economic growth domestically, it is increasingly clear that India and other emerging market economies must play a more proactive role in ensuring open global markets. A vacuum in international trade leadership is being created which must be filled with voices and influences such as India's that favor open markets. This will, of course, require that India also be more willing to liberalize its own markets, a greater "openness to its own openness."

1.94 Two specific opportunities arise. First, given the discussion in Chapter 7 on the need to promote labor-intensive exports, India could more proactively seek to negotiate free trade agreements with the UK and Europe. The potential gains for export and employment growth are substantial. Based on work initiated in last year's Survey, we calculate additional \$3 billion in the apparel and leather and footwear sectors and additional employment of 1.5 lakhs (Table 1).



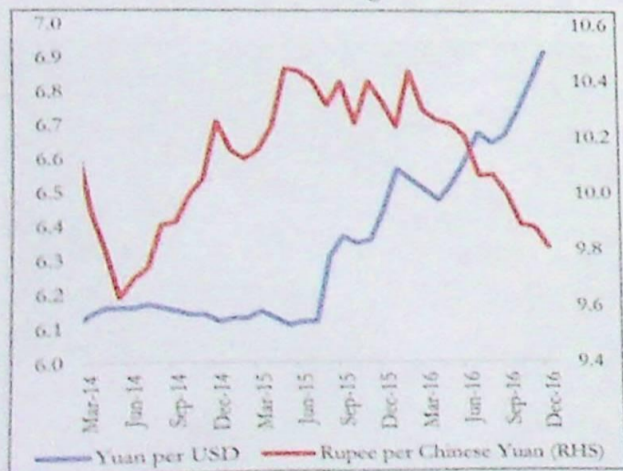
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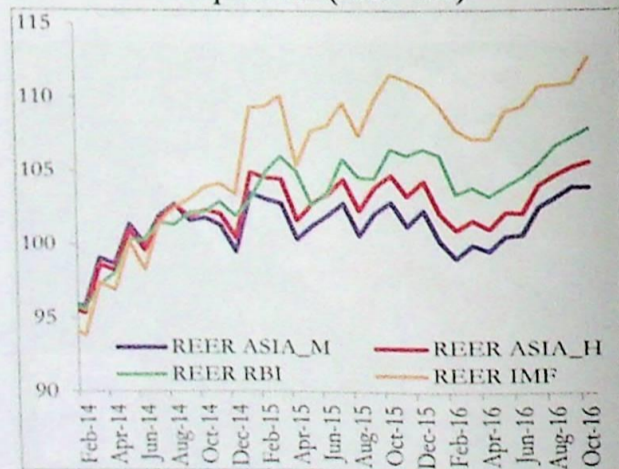


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Table 1. Potential additional exports and jobs of FTAs with EU and UK FTA

	Apparels		Leather Goods		Footwear	
	Incremental Exports (\$Mn)	Gain in Employment (number)	Incremental Exports (\$Mn)	Gain in Employment (number)	Incremental Exports (\$Mn)	Gain in Employment (number)
EU	1483.6	76853	416.9	18542	216.9	9966
UK	603.3	31176	103.8	4615	95.3	4381
<b>Total</b>	<b>2086.9</b>	<b>108029</b>	<b>520.7</b>	<b>23156</b>	<b>312.2</b>	<b>14347</b>

Source: Survey Calculations.

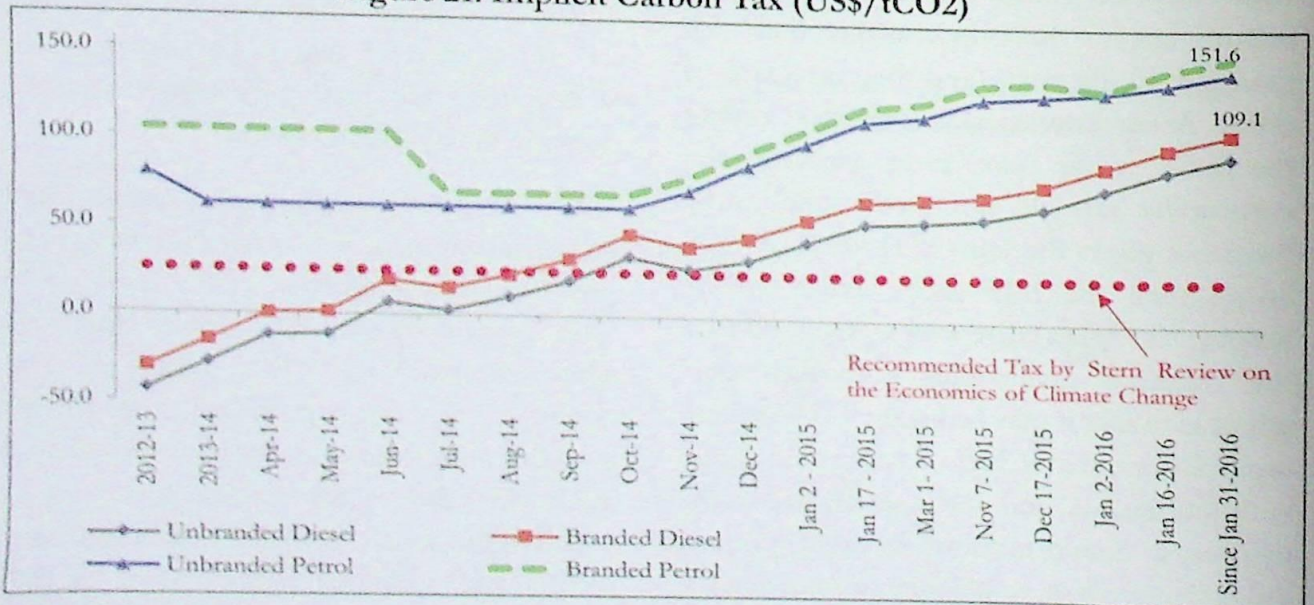
1.95 At the same time, with the likely US retreat from regional initiatives such as the Trans-Pacific Partnership (TPP) in Asia and the Trans-Atlantic Trade and Investment Partnership (TTIP) with the EU, it is possible that the relevance of the World Trade Organization might increase. As a major stateholder and given the geo-political shifts under way, reviving the WTO and multilateralism more broadly could be proactively pursued by India.

#### D. Climate Change and India

1.96 The Paris Agreement on climate change in December 2015 has been one of the shining recent examples of successful

international cooperation. The focus will now shift to implementing the agreements. There is universal agreement (Stern, 2006, Weitzman, 2007 and Nordhaus) that a key component to tackling climate change will be to price carbon. How has India fared on this score? This is an important question given the major setback to the cause of climate change created by the large decline in petroleum prices since June 2014.

1.97 Table 2 and Figure 21 provide some answers. Since June 2014, when international oil prices started declining, India has increased its excise duties from Rs 15.5 per litre to Rs 22.7 per litre as of December 2016 for branded petrol and from Rs 5.8 per litre to Rs. 19.7

Figure 21. Implicit Carbon Tax (US\$/tCO<sub>2</sub>)

Source: Own calculations



Table 2. Domestic petroleum tax in major countries (dollars per litre)

S.No	Country	Diesel				Petrol			
		Jun-14	Jan-16	Nov-16	% change (Nov 2016 over June 2014)	Jun-14	Jan-16	Nov-16	% change (Nov 2016 over June 2014)
1	India	0.00	0.38	0.38	large no	0.21	0.54	0.53	152.3
2	USA	0.13	0.14	0.14	5.4	0.11	0.12	0.12	6.3
3	China*	0.30	0.28	0.28	-6.7	0.32	0.34	0.34	6.3
4	Japan	0.39	0.34	0.35	-9.7	0.63	0.55	0.57	-8.9
5	Canada	0.29	0.21	0.23	-21.2	0.37	0.27	0.29	-21.2
6	France	0.60	0.74	0.75	25.1	1.18	0.93	0.92	-22.0
7	Germany	0.64	0.68	0.69	8.0	1.24	0.93	0.92	-25.5
8	Italy	0.84	0.91	0.91	8.0	1.42	1.07	1.05	-26.2
9	Spain	0.50	0.58	0.59	17.0	0.97	0.71	0.71	-26.9
10	UK	0.98	1.08	0.97	-1.1	1.35	1.08	0.96	-28.8

Source: For G7 countries International Energy Agency (<http://www.iea.org/statistics/topics/pricesandtaxes/>) otherwise, Ministry of Finance estimates

per litre for branded diesel. Table 2 quantifies the climate change effort undertaken by the major G-20 countries and India. The results are striking.

1.98 The increase in petrol tax has been over 150 percent in India. In contrast, the governments of most advanced countries have simply passed on the benefits to consumers, setting back the cause of curbing climate change. As a result, India now outperforms all the countries except those in Europe in terms of tax on petroleum and diesel.

1.99 Figure 21 shows the implied carbon tax resulting from India's actions. Having decisively moved from a regime of carbon subsidies, it is now de facto imposing a carbon tax on petroleum products at about US\$150 per ton, which is about 6 times greater than the level recommended by the Stern Review on Climate Change.

1.100 Finally, it is worth seeing India's fossil fuel use from longer term perspective. How is India faring relative to other countries at comparable stages of economic development in terms of the share of fossil fuel use in

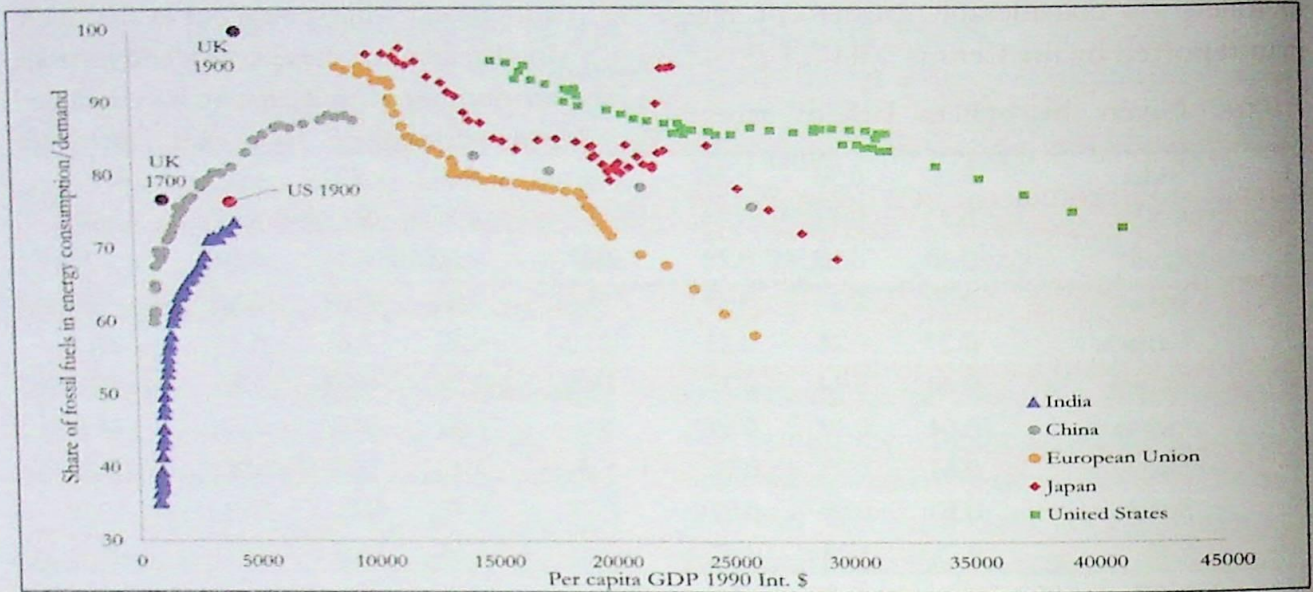
overall energy consumption? Figure 22 plots this share against a country's per capita GDP in purchasing power terms. So far, and for the conceivable future, India's reliance on fossil fuels remains well below China (the most relevant comparator) but also below the US, UK and Europe at comparable stages of development (this echoes the commitment made by India at Heiliengdamm that it would never exceed the per capita emission of advanced countries). Going forward, of course, India needs to bend the curve to ensure that its reliance on fossil fuels declines and keeping it below the level of other countries so that its good global citizenship on climate change can continue.

## E. ENSURING WOMEN'S PRIVACY

1.101 In each of the last two years, the Economic Survey has focused on a dimension of concern to women. In FY2015, it highlighted the violence against women related to coercive family planning methods. In FY2016, the Survey featured a chapter on "Mother and Child," emphasizing the importance of government interventions to



Figure 22. Fossil Fuel as a share of Energy Consumption/Demand and GDP per capita (1971 - 2040)



Data Source: Projections of Shares of fossil fuel is from share of fossil fuels in TPED for 2020, 2025, 2030, 2035 and 2040 computed from World Energy Outlook 2016 data and projections (New Policies Scenario) for Coal, Oil and Gas GDP per capita taken from The Maddison-Project, <http://www.ggdc.net/maddison/maddison-project/home.htm>, 2013 version. Per capita GDP for EU calculated from the above source does not include Malta, Cyprus and Luxembourg

Share of fossil fuels in energy consumption, 1971 onwards till most recent available from World Bank Data

Share of fossil fuels for US for the year 1900 from US Energy Information Administration/ Annual Energy Review 2011

Share of fossil fuels for UK from Warde (2007)<sup>8</sup>. Shares pertain to those of England and Wales

ensure long term well-being of women and children.

1.102 While the relationship between sanitation practices and health outcomes has been well documented in the literature (Spears and Cummings (2013)), this section illustrates the disproportionate burden that falls on women and girls due to deficiencies in sanitation facilities.

1.103 This burden on women can take several forms: threat to life and safety while going out for open defecation, reduction in food and water intake practices to minimize the need to exit the home to use toilets, polluted water leading to women and children dying from childbirth-related infections, and

a host of other impacts.

1.104 Women's personal hygiene is therefore important not just for better health outcomes but also for the intrinsic value in conferring freedom that comes from having control over their bodies, a kind of basic right to physical privacy. Put differently, impeded access may well be creating "gender-based sanitation insecurity."

1.105 Lack of access to sanitation is widespread and well-documented. In 2011, the Census reported that more than half of the country's population defecated in the open. More recent data shows that about 60 percent of rural households (Ministry of Drinking Water and Sanitation- 2017<sup>9</sup>;

<sup>8</sup> Paul Warde (2007), *Energy Consumption in England and Wales: 1500-2000* published by Consiglio Nazionale delle Ricerche (CNR), Istituto di Studi sulle Società del Mediterraneo (ISSM)

<sup>9</sup> Source: Swachh Bharat Mission website: <http://www.sbm.gov.in> (accessed on January 21, 2016)



up from 45% NSS 2015) and 89 per cent of urban households (NSSO 2016)<sup>10</sup> have access to toilets - a considerably greater coverage than reported by the Census 2011<sup>11</sup>.

1.106 Given this general lack of access, what additional challenges do women face? A rapid study conducted in 2016 by WASH Institute and Sambodhi<sup>12</sup> for this Economic Survey provides some insight. The details of the survey design are in Appendix 2. Note that the facts listed here do not imply a causal relationship – this will be separately addressed in research studies currently underway<sup>13</sup>.

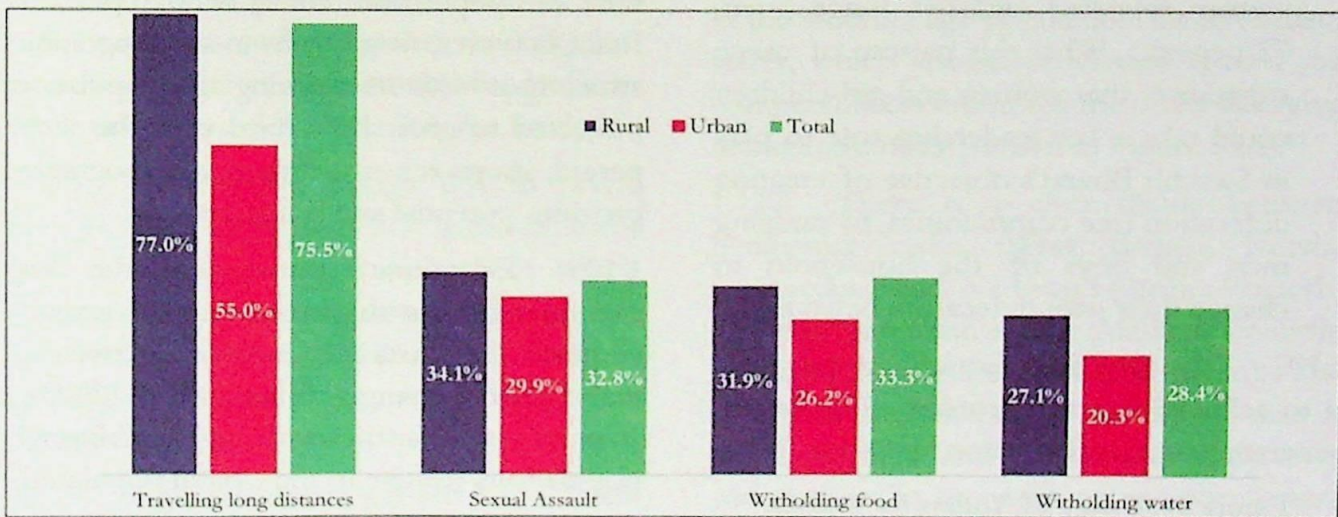
### The Disproportionate Burden on Women

- *Households without toilets:* For the majority of households without toilets, the Rapid Survey suggests some worrisome trends (Figure 23): 76 percent of women had to travel a considerable distance<sup>14</sup> to use

these facilities. 33 percent of the women have reported facing privacy concerns and assault while going out in the open. In the face of these considerable risks, the number of women who have reduced consumption of food and water are 33 percent and 28 percent respectively of the sample. Apart from illnesses, disruptions and deficiencies in the short-term, reduced food and water intake also causes severe long-term debilitating impacts on health, and impedes in cognitive development of girls and infants. Many studies (Singh et. al 2008; Curtis and Minjas 1985) have similarly emphasized that women and men going out into the open have to cope also with exposure to natural elements, snake-bites, etc.

- *Household with toilets:* In households with

Figure 23. Potential Consequences of Not Having Toilets for Women



Source: Rapid Survey (2016).

<sup>10</sup> Swachhata Status Report, National Sample Survey Organisation, 2016

<sup>11</sup> The differences between Census-2011 and more recent data sources are in large part due to the rapid acceleration of toilet provision under the Swachh Bharat Mission

<sup>12</sup> The Rapid Survey on Gender Norms and Sanitation and Hygiene, and Implications by life-stage (adolescent girls, pregnant women, and mothers of children under 5), covered 10 states with different levels of sanitation coverage across 5 geographical zones.

<sup>13</sup> All proportions cited in this section are conditional means after controlling for other confounding factors including caste, religion, Above Poverty Level or Below Poverty Level status, rural/urban, gender, and Individual Household Latrine (IHHL) availability. All numbers cited are statistically significant at 95% confidence interval.

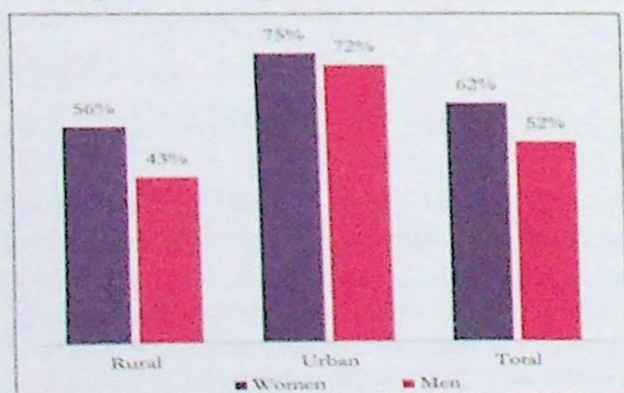
<sup>14</sup> The rapid survey captured long distances as the respondent's self-reported variable.



toilets, women report far greater use of these in-home facilities than men, suggesting that there may be a greater demand amongst women. Coffey et al (2016) found a revealed preference for households to defecate in the open because of a variety of factors (caste and soak pit latrines, especially). But it appears from the Rapid Survey that for households that do have a toilet, patterns of toilet usage are better for women than men. This fact is also independently confirmed in the NSSO Survey (2016). Figure 24 shows that, of the women in households with toilets, 62 percent reported use of the toilet “always” (only 52 percent men reported exclusive usage in such households). In rural households, the proportion of regular use by women was 56 percent (men, 43 percent); and in urban households, 75 percent of women reported exclusive usage (men, 72 percent). What this pattern of usage suggests is that women and girl-children could take a key leadership role to play in Swachh Bharat’s objective of creating defecation free communities, by nudging men and boys of the household to change their own defecation behaviors.

1.107 The first step to tackling this issue is to acknowledge the problem. This means generating more information on a topic that is

Figure 24. Usage of Toilets by Women



Source: Rapid Survey (2016).

socially considered taboo or ignored. Second, recognizing the positive behavioral patterns that women demonstrate upon obtaining access to sanitation services is critical. Equally, when these services are denied, they face considerable insecurity and nutritional risks. For this reason, ensuring safe and adequate sanitation, water security and hygiene—the objectives of Swachh Bharat—as part of a broader fundamental right to privacy is becoming a serious policy issue.

#### F. INDIA’S SOON-TO-RECEDE DEMOGRAPHIC DIVIDEND

1.108 2016 was a turning point in global demographic trends. It was the first time since 1950 that the combined working age (WA) population (15-59) of the advanced countries declined (Ip(2015)). Over the next three decades, the United Nations (UN) projects that China and Russia will each see their WA populations fall by over 20 percent. India, however, seems to be in a demographic sweet spot with its working-age population projected to grow by a third over the same period; always remembering that demography provides potential and is not destiny.

1.109 Economic research in the last two decades has suggested that the growth surges in East Asia may have been driven by demographic changes (Bloom et al. (2003)). In particular, countries with large working age populations relative to the overall population appear to benefit from greater economic dynamism. Younger populations are more entrepreneurial (adding to productivity growth); tend to save more, which may also lead to favourable competitiveness effects (Prasad, Rajan and Subramanian (2007), Wei and Zhang (2011)); and have a larger fiscal base because of economic growth and because there are fewer dependents (children and elderly) for the economy and government to support (Bloom et al. (2010)).



1.110 Theory suggests that the specific variable driving the demographic dividend is the ratio of the working age to non-working age (NWA) population-- an intuitive number, because a magnitude of 1 essentially means that there are as many potential workers as dependents. Both the level and the growth of the WA/NWA ratio have a positive impact on economic activity (Bloom and Canning (2004)).

### Distinctive Indian Demography

1.111 Figure 25 compares the evolution of the WA/NWA ratio between 1970 and 2050 (based on the medium variant population projections by the UN) for India, Brazil, Korea, and China. It illustrates three distinct features about the Indian demographic profile that have key implications for the growth outlook of India and the Indian states.

1.112 First, India's demographic cycle is about 10-30 years behind that of the other countries, indicating that the next few decades present an opportunity for India to catch up to their per capita income levels.

1.113 In addition, India's WA to NWA ratio is likely to peak at 1.7, a much lower level than Brazil and China, both of which sustained a ratio greater than 1.7 for at least 25 years. Finally, India will remain close to its peak for a much longer period than other countries.

1.114 This distinctive pattern has a cause and consequence. The cause is shown in Figure 26A, which plots the total fertility rate (TFR) for comparable countries and groups of countries. The figure illustrates that all these countries started the post-World War II era with roughly the same very high TFR rates. In China and Korea, TFR then declined rapidly to below-replacement levels (less than

2 children per female), causing the share of working age population to rise until the early 2000s, then to fall as ageing began to set in. In India, however, the decline in TFR has been much more gradual.

1.115 The growth consequence is the following. Unlike the East Asian successes, India should not expect to see growth surges or growth decelerations of the magnitudes experienced by the East Asian countries, at least not on account of the demographic dividend. This does not rule out accelerations for other reasons, related to reforms and strength of domestic institutions. At the same time, India might be able to sustain high levels of growth (on account of the demographic dividend) for a longer time.

1.116 A final distinctive feature in India is the large heterogeneity among the states in their demographic profile and evolution. Figure 25B shows the evolution in the working age population for ten Indian states, which should be viewed against the comparable evolution for the other emerging market countries (shown in Figure 25A).<sup>15</sup>

1.117 There is a clear divide between peninsular India (West Bengal, Kerala, Karnataka, Tamil Nadu and Andhra Pradesh) and the hinterland states (Madhya Pradesh, Rajasthan, Uttar Pradesh, and Bihar). The peninsular states exhibit a pattern that is closer to China and Korea, with sharp rises and declines in the working age population. The difference, of course, is that the working age ratio of most of the peninsular states will peak at levels lower than seen in East Asia (West Bengal comes closest to Korea's peak because of its very low TFR). In contrast, the hinterland states will remain relatively young and dynamic, characterized by a rising working age population for some time,

<sup>15</sup> New demographic projections for the states from 2011-2051, based on the latest fertility and mortality indicators, have been done by Professor S Irudaya Rajan and Dr S Sunitha at the Center for Development Studies, Kerala.