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## Title of the paper

# *Gold Monetization in India as a Transformative Policy: A Mixed Method Analysis*


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**Abstract**

Gold imports are a major contributor to India's current account deficit. The success of the Gold Monetization Policy 2015 in bringing domestic gold back into circulation becomes important in a milieu where gold holds sociocultural importance. This mixed method research analyses how various stakeholders have approached this transformative policy.

A survey based study of households shows family functions and festivals to be triggers for gold purchase, indicating ingrained habit, planned accumulation, and clear reluctance to sell gold received as gift. Propensity to consume gold is positively correlated with number of daughters. Interviews with banks and refiners clarify that banks would promote products based on this policy given more operational control.

(Word count of abstract: 110)

Keywords: gold; gold monetization; policy; gold consumption; policy implementation; Asia; India

## 1. Introduction

India is the second largest consumer of gold in the world as per 2015 demand trend estimates (World Gold Council, 2016b). Reports indicate that the unconfirmed private stock of gold in India is close to 25,000 tonnes (Bhayani, 2016), approximately 15% of all the gold that has been mined till date worldwide (World Gold Council, 2016a). Compared to other countries, the country's central bank, the Reserve Bank of India (RBI), holds approximately only 500 tonnes of gold as reserves. Even though the price of gold has shown an upward trend over the decades (O'Connor, Lucey, Batten, & Baur, 2015), there is no respite in the consumption of gold in India except during the periods with state restrictions. Much of the gold that is consumed goes out of circulation and is not available for further economic activity. India is also a significant net importer of gold, which adversely affects the Current Account Deficit (CAD) (D'Souza, 2015).

Given this, it is important for the government to encourage savings and investment methods that reduce the import of gold and also to bring back private stock of gold back into circulation to support economic activity; a key policy decision to support these goals was the 2015 Gold Monetization Scheme (GMS) by the Government of India (GoI, 2015). This transformative policy is aimed at helping India control its deficit while not coercively controlling its consumption of gold. This policy is expected to transform the economic fabric without hindering the sociocultural role of gold that is important at the micro level. This policy has three elements

- Gold Deposit Scheme (GDS)
- Sovereign Gold Bond Scheme
- Ashoka Chakra gold coins

As of 2016, the GDS[1] has mobilized only 5.73 tonnes of gold from retail sources and temples (Bhayani, 2016). This figure is a mere 0.024%[2] of the overall estimated household and temple gold holding. Thus, in its first two years, the policy has not gained traction among consumers. The objective of this research is, thus, to study the challenges in the policy implementation of the Gold Deposit Scheme (GDS), and suggest measures to increase the takeup rate of the policy through insights developed in this study. The stakeholders in the gold ecosystem whom we study are consumers, bankers and refiners; along with the government, they form the gold ecosystem. Specifically, from a consumer perspective, we study the attributions and associations to gold using a nation-wide survey, and the determinants of gold consumption using National Sample Survey (NSS) data. We conduct an interview-based study with bankers and refiners in order to understand the current gaps in policy implementation such as incentive structure, risk mitigation and process issues.

This work gains importance in the light of the fact that research on gold consumption in India is nascent. To the best of our knowledge, this research is the first to address issues related to gold consumption amongst Indian households in a substantive mixed method manner. There has been increased interest in gold monetization especially in the context of India’s high CAD (Singh et al., 2015). In addition, there has been interest from the government and the RBI to understand the high levels of household gold consumption. The panel instituted for this study will look into the spending patterns and will provide insights on household finance (PTI, 2016).

[1] Alternatively used to refer to GMS for the purposes of this paper
[2] This compares to the estimated 1% of the gold mobilized in Turkey.

The study contributes to the growing literature in the domain of government policy action with regard to shaping economic variables through socioeconomic and financial measures. This research addresses the question of the impact of a new targeted policy on the various stakeholders who form a negotiated ecosystem. The research on consumers presents a detailed picture of associations, attributes and preferences related to gold consumption, while the research on bankers and refiners provides an outline of the various concerns and incentive preferences that these stakeholders have. Taken together, the two sections of research collectively highlight the issues and opportunities put forth by the transformative measure of the recent gold monetization policy in India.

This paper is organized as follows. Section 2 presents the literature on gold consumption and the gold ecosystem in India. The next section provides a short description of the transformative policy framework used in this research. The following section describes the research question and hypotheses. The next section details the methodology used in the paper. This is followed by results and analysis and then the findings. The final section presents implications of the study findings.

## 2. Literature Review

In any study of gold consumption in India, the aspect that stands out first is the habitual nature of the consumption which is manifested in several ways. Moreover, consumers ascribe a very high valuation to gold over and above its monetary value. They also display a strong attachment to gold, especially jewellery, so that gold once purchased is rarely sold, and is only exchanged for other gold jewellery if required (Sahay and Mukherjee, 2016). Social occasions such as weddings and cultural occasions such as festivals form triggers for gold buying, and purchase happens without any identifiable reason. Taken together, this means that consumption and purchase of gold can be viewed in the light of the psychology of habit and how to either change habits or use them to the benefit of the GMS.

### *2.1 Consumer segments*

Consumer segments differ from each other in various ways. For instance, it can be hypothesized that distribution of mental baskets regarding gold consumption will be skewed towards investments/financial security more for rural segment and less so when it comes to urban segment. Also, rural consumers, therefore, are likely to part with their gold more easily as compared to the urban consumers since their decision making with regard to gold is largely linked to investment, whereas for the urban consumers, aspects like social value take precedence and that hampers the decision to part with gold. Rural consumers are likely to have fewer non-gold avenues for investment and savings, as compared to urban consumers.

One facet of gold is that it allows the people from the lower income strata to be a part of the credit markets. By means of hypothecation, gold as an asset can be pledged to facilitate credit participation. This indicates the importance of gold in offering a means for risk taking and thereby social mobility. Hence, cultural and symbolic value might not always be the primary driver for buying gold for the lower income segment; the need for investing and need for liquidity might also be substantial, given the economic growth seen in the country in the last two decades.

If we consider the middle income families, people are educated and have access to the formal banking system. Consumers in this segment are relatively more financially savvy and hence do acknowledge the fact that gold as an asset is not productive as an investment. Yet, the demand for gold is high but for a variety of reasons. Besides this gold has significant social and cultural value which makes it a sticky asset which consumers do not want to part with.

For the upper echelons of the society, gold in India might play a different role. One of the ways in which this stratum of the society evaded taxes was by using the exit option of investments in gold. This gold in effect goes through as an unaccounted stream of cash flows from the formal system and is a perennial concern for the government. One of the aspects that hinders the mobilization of gold from this stratum is the requirement for the declaration of the source of the gold and the practice of passing on the ancestral gold holding to future generations.

### *2.2 Value of gold and the role of habit*

Consumers attach significant value to gold, which arises from findings that gold is often purchased for "safe investment" and for "social value"; similarly, consumers also believe that the value of gold comes from the fact that it is "stored as a liquid asset" (Sahay & Mukherjee, 2016). Thus, gold has both investment value and sentimental value for Indian families. Clearly, the purchase of gold is driven by multiple considerations, some of which include tradition and habit.

Habits are repeated actions that "interface with goals to guide behaviour" (Wood & Rünger, 2016). Although habit learning follows the cycle of cue -> thought -> action -> reward, multiple iterations of the cycle lead to the pathway of cue -> action, so that consideration of results and need for reward are no longer important. The two key features of habit automaticity, activation by recurring cues present in the context and insensitivity to changes in goals (Wood & Rünger, 2016), are directly applicable in the case of gold buying behaviour. Often, gold purchase is triggered by festivals such as Akshaya Tritiya, Dhanteras, Ugadi and Pongal when the day is considered auspicious for buying gold. The consumer would find it difficult to answer if questioned on the reason for the purchase at that particular point of time. With regard to goals, one common practice among gold consumers is planned buying for accumulation. At times, such purchase of gold in small quantities over a period of time is carried out with a specific objective in mind, such as a daughter's marriage, through the custom of *streedhan*, loosely translated as dowry (Dempster, 2006; Srinivasan, 2005). Here again, the practice is part of the mindset, so that even the idea of buying a flat or gradually investing in stocks such as through a Systematic Investment Plan is not considered.

With regard to consumption of gold, there are several other investment options available today such as gold bonds, equity, bank deposits and so on. Attraction is highly prevalent and applies to the masses, the middle and lower income classes, who tend to consider gold to be superior to nearly all alternate investment vehicles, and are often highly influenced by family elders (Balaji & Maheswari, 2014). Unlike this, similarity applies to the younger section of the middle and upper income classes, especially in the urban areas, who are not strongly bound by tradition and wish to stand out by wearing non-gold jewellery such as diamond and platinum. Both groups are interesting targets for GMS, and habit change through means such as consumer education for the former might be useful.

The first step in changing such strong habits is to understand habit automaticity (Wood & Rünger, 2016), in terms of habitual behaviour as a (thoughtless) response to a trigger, and its linkage to goals (Aarts & Dijksterhuis, 2000). The planned hoarding of gold is a habit driven by a clear goal: generating a corpus of gold jewellery in time for the daughter's wedding (Srinivasan, 2005). This is inextricably linked to other habits, such as converting each bonus income, be it salary or agricultural windfall income, into a chunk of gold jewellery, instead of spending it or investing it in other ways. Similarly, every occasion in the life of a girl is seen as an instance to purchase gold due to attributes such as being auspicious and precious: birth, 28th day ceremony[3], first birthday, and so on. Other triggers such as festivals and gifting occasions also result in automatic purchase of gold.

Any measure that seeks to change habits needs to study the underlying attitudes that drive the habits; these attitudes can be deliberate or explicit, and automatic or implicit (Gawronski & Bodenhausen, 2006). Explicit and implicit attitudes towards gold often do not match, to the extent that consumers might not only say something different from what they believe, they might even act contrary to what they say and/or believe. For instance, consumers often purchase gold as a form of investment, yet they do not part with it in exchange for other forms of investment, possibly because they are affected by the emotional attachment that they feel towards the gold after it is purchased. Gold is viewed as an asset to be accumulated, and in some way different

[3] This refers to the celebration of the newborn baby having completed one lunar month (27 days) and thus having reached its birthday in the next lunar month. Traditionally, this is the first celebration after a baby is born.

from other assets. Yet, it would be difficult to directly elicit the reasons for such an attitude. The investment value of gold is unidimensional to the extent that it involves purchasing gold bullion (typically by educated consumers) and/or jewellery (rural upper income classes, and relatively less sophisticated urban consumers). Unlike this, the sentimental value of gold is multidimensional, since gold invokes aspects such as social status (jewellery to show off), beauty (adornment), sanctity of relationships (pendant, bangle and ring often signify marriage), and glorification (gold plating of temple structures).

Given the role of gold in the lives of consumers, it is important to note that individuals will be willing to part with their gold as part of the mobilization scheme only if they place sufficient trust in the ability of the banking system to provide value for their gold. The success of the mobilization scheme will depend on understanding the interaction amongst the stakeholders, process issues with respect to the flow of gold and the overall process from consumer's perspective. It will also depend on the consumer intrinsic willingness to part with their gold, even if temporarily.

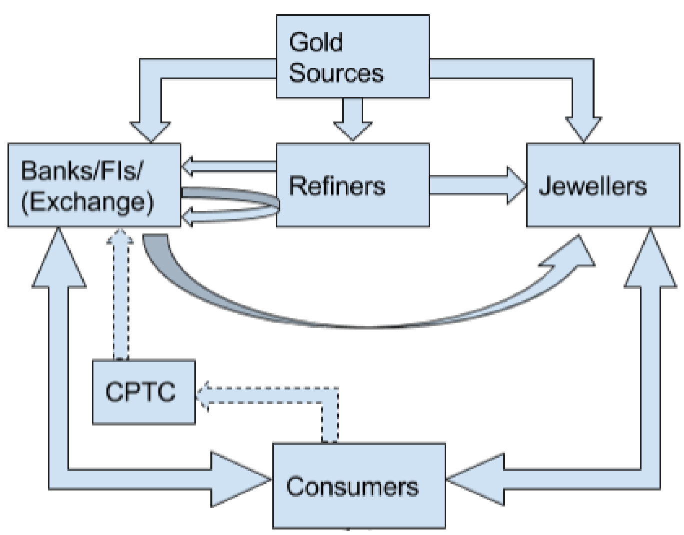
One of the key stakeholders in the GMS is the bank. In India, the bank is a one stop shop for meeting the financial needs of the majority of the Indian public and 70% of all banking assets are owned by public sector banks where GoI has a majority stake. In the context of GMS, there are challenges that are faced by this intermediary which prevents an effective and efficient implementation of the scheme. Since this is a scheme that has been rolled out by the GoI which has sought the help of the banks to promote the scheme, it is imperative to look how gold fits into the Business Models (BMs) of the banks and to examine the roll-out processes of GMS to understand the gaps in detail. It is also important to note the role played by RBI, which is the bank regulator in terms of the policy framework, and its impact on GMS related bank behavior.

### *2.3 Gold ecosystem*

Gold monetization hinges on three key stakeholders: consumers, banks and quality assurance agents. Figure 1 illustrates the flow of gold amongst the key stakeholders. The gold that comes into the country reaches banks, jewellers and refiners. Banks take the help of refiners for quality assurance. Jewellers source the gold from banks as well. Jewellers use refiners as well as intermediaries like Collection and Purity Testing Centres (CPTC) in order to test the purity of gold. From jewellers, individuals buy gold jewellery and coins/bars which they have an option of returning for other jewellery or money. Given this intricate ecosystem, a viable business model is required for the banks, jewellers, refiners and CPTCs to take up this policy.

Figure 1

The Gold Ecosystem in India



Among the various possible business models, the Network Efficiency based model, is the most suitable. This is because in such a model, the efficiencies are created across the entire network of stakeholders, whereas in other models, the profit logic is much more narrowly defined than an intricate network would warrant. For banks in India, value capture is through increase in volumes of transactions. The network hub is considered a place with real time transparent and trustworthy information. In GMS, this particular selection of BMs would make the banks the hubs. Such a model is best employed when the hub acts as counterparty to each transaction (Chatterjee, 2013).

At the same time, in such a model, the dependence on other stakeholders is the most (Chatterjee, 2013). In the case of GMS, banks are dependent on CPTCs/Refiners/Jewellers/RBI; while consumers depend on all of these for an effective and efficient service. It is imperative in this model to convince stakeholders like banks, jewellers and CPTCs that the pie of the business will grow and hence it is worthwhile to incur the initial expense. Sharing of risks and expenses also would help. Hence it is necessary to involve all the stakeholders linked to the hub, especially since none of the stakeholders can unilaterally handle GMS. Refiners provide quality but have limited reach unlike that of CPTCs. Jewellers depend on trust from individuals who buy gold but, hitherto, they have not had a strong incentive for quality assurance for the jewellery that they sell. Very few jewellers have been authorized as collection centres for the scheme, given the stringent quality assurance process.[4]

*2.4 Gold deposit scheme and the role of banks*

In the case of gold deposit scheme, there are three maturities that have been provided to the customer (RBI, 2016): short term deposit (STD), medium term deposit and long term deposit

[4] Hence we do not study jewelers as one of the stakeholders in GMS.

(MLTD) which are 1-3 years, 5-8 years and 10 -12 years respectively. Amongst these maturities, only short term deposits remain in the balance sheet of the banks. The other two deposits would be with RBI under the name of GoI and bank facilitates the process as an intermediary in mobilizing the gold. In the latter type of deposits, the banks earn a fee based revenue stream, which is 2.5% of the gold mobilized. Unlike this, when it comes to the short term deposits, banks manage the assets side of deploying the gold as Gold Metal Loans (GML) to jewellers.

Indian banks can take inspiration from the success of Turkish banks in mobilizing gold deposits from the public. In Turkey the scheme delivered close to 50 tonnes of "under the pillow" gold. Given that Turkey has approximately 5000 tonnes of gold with households (Street, Hewitt, & Gopaul, 2015), the mobilization effort yielded close to 1%. A 10% success rate in India would yield 2000-2500 tonnes which would be significant achievement. One of the activities that banks in Turkey carried out was to arrange special days for ladies to open accounts in their banks using gold deposits, something similar to the deposit raising fairs conducted by Indian banks. Moreover, the Turkish central bank has allowed gold to be part of the CRR (to the tune of 30% of the 10% mandatory requirement) (Street et al., 2015).

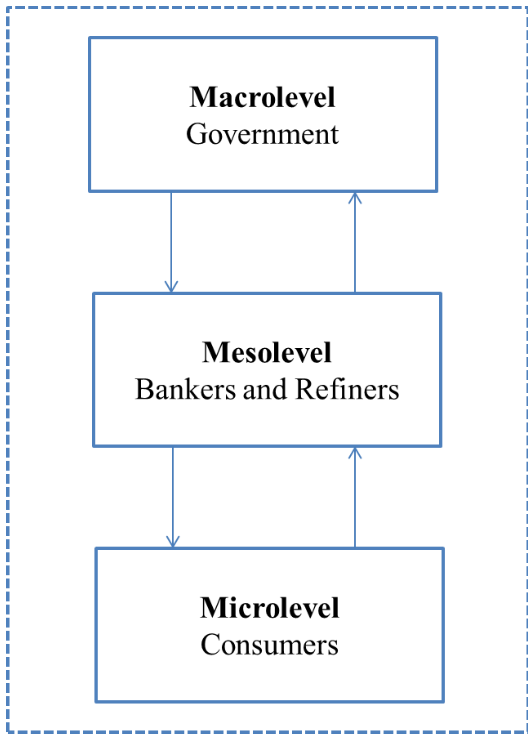
### *2.5 Role of refiners*

Refiners are involved in providing gold of stated purity to various stakeholders for a variety of purposes. They provide gold of 995 and lower purity standard to banks for bullion to be sold to consumers. They also purify the gold supplied by banks to provide to jewellers, which the latter then use for jewellery and bullion, which are typically of 18-22 karat and 24 karat respectively. Jewellers are transit players in the ecosystem, in the sense that they do not own the gold at any point of time, and simply handle it in order to determine its purity and identify impurities. Out of the 30-odd refiners in India, only 8 are approved by the Bureau of Indian Standards (BIS) for carrying out refining for the purposes of GMS. While refiners might not play a central role in GMS, their position is critical, since any gold that consumers submit to a bank has to be certified through an approved refiner.

In summary, the various stakeholders in the gold ecosystem have a diverse set of perspectives that need to be taken into consideration in order to implement the GMS effectively. Consumers have strong associations with various aspects of gold, which makes them habitual buyers and reluctant sellers of gold. For consumers, gold is considered an important form of investment, which highlights the importance of trust in the GMS process. CPTCs and refiners are key players who can develop this trust and draw consumers into the process. At the same time, banks form a node that not only receives the gold from the consumer but also assesses its purity and issues the certificate that substitutes solid gold held by the consumer. Simultaneously, banks have to manage the incoming gold in a variety of ways depending on the term of deposit. Thus, in this research, it is important to combine the perspectives from various stakeholders, and hence, this work uses a mixed method research methodology (Creswell, Plano Clark, Gutmann, & Hanson, 2003). Such a research methodology uses primary and secondary data, with quantitative and qualitative techniques to capture significant aspects of data relating to and viewpoints from the three key stakeholders, consumers, banks and refiners, enabling a holistic understanding. Other research has employed such mixed method techniques to better capture insights in contexts as diverse as women's empowerment in Zambia (Bonilla et al., 2017).

## 3. Transformative Policy Framework

As suggested in several strands of literature such as public policy and development research, this paper uses a transformative policy framework for analysing the relationship between the various stakeholders. The framework is outlined below, and consists of three levels, macro, meso and micro.




*Source: adapted from Rotmans, Kemp, & van Asselt (2001)*

Rotmans et al. (2001) suggest that whenever there is a transition that takes place in society, there is an associated structural transformation. At such a time of transition, the government, as the macro level player can play an important role in the transformational process through effective policy formulation and implementation. In the case of gold monetization, the government is the key macro level player that can incentivize the meso and micro level players, to take up the scheme actively. At the same time, as Steward (2012) points out, meso level players are key to policy success through innovation. Similarly, consumers at the micro level will be encouraged to take up the policy if, in addition to communication from the policy-makers, there is a strong drive from the meso level. Such a transformative policy approach is especially appropriate given the deep-rooted role played by gold in the consumer mindset and culture and the "transformative role of social policy" (Mkandawire, 2007).

In terms of methodology, it is essential to note that mixed method research has been suggested as appropriate for studies based on transformative frameworks (Sweetman, Badiee, & Creswell, 2010).

**4. Research Questions**

Given the above, the goal of this research is to generate insights that help to design and implement an effective and efficient change in the GMS that incorporates an understanding of the habits of consumers and business justification for banks.

Consumers

a. What are the causes for the current consumer habits with respect to gold?
b. What are the ways to change these habits for successful implementation of the gold monetization scheme?

Banks

a. What are the incentives or statutes necessary for a set of banks to take up Gold monetization scheme?
b. What are some suitable BMDs for banks as hubs, which includes other stakeholders who are part of the process of gold mobilization?

**5. Hypotheses**

Consumers

1. Current mind set and habits
    a. Consumers have deeply entrenched mindsets and habits, which along with triggers lead to their gold consumption and purchase behaviour
    b. Streedhan as gold is arising out of social pressure despite the availability and desirability of substitute investments(house/land/financial assets) to provide wealth/security to the daughter who is leaving the home
2. Causes of habits
    a. Consumer attach a lot of symbolic value to gold which leads to very low willingness to part with gold
    b. Consumers are willing to exchange jewellery for other gold jewellery but not sell the gold jewellery for other purposes
    c. Gold is seen as a safe and liquid asset which doesn't have any substitute
    d. Family upbringing where gold is valued in every social occasion in one's life

e. Lure for possessing the metal compared to a piece of paper which is backed by the asset
f. People prefer pledging gold to selling gold to meet their needs
g. Trust in Jewellers (repeat customers, loyalty programs) by the consumers has increased over time even though BIS hallmarking has increased in prevalence and this assurance mechanism is being advertised heavily

3. Ways to change them
    a. Context changes such as marriage and child birth trigger new thinking with respect to gold
    b. Context changes such as shift to a nuclear family (to a new city) deemphasize the use of gold as an investment
    c. The entire jewellery consumption and investment decisions are primarily made by the female partner

Bankers

1. Ways to ensure bankers go for gold
    a. Allowing gold as a part of CRR is one of the effective ways to incentivize bankers to mobilize gold
    b. Statutes akin to priority sector lending is an effective way to mobilize gold
    c. It will be beneficial to mandate new payment banks and small banks to mobilize gold as compared to the bigger players which have a lot of legacy issues at present.
    d. Current incentives are sufficient to lure Bankers to go after consumers to mobilize gold because it covers the entire cost of acquisition

e. Business in gold is a very small part of the overall business of banks at this time and so banks are, in reality, not very interested in gold related business.
f. Bankers are satisfied with the network of CPTCs/refiners in the logistics of gold mobilization

2. BM and process issues
   a. Current process of customer walking into a CPTC to ascertain the purity and then approaching the banks to get the assurance certificates is not the ideal process
   b. Integration of quality assurance with Bankers would help in increasing the efficiency of the process
   c. Consumer education using technology would help in getting the new generation consumers interested (apps, trolls, youtube videos)
   d. Consumers are not convinced of the merits of the scheme due to the lack of training and interest of the Banking staff
   e. Prior failures of monetization policies have led to a biased mind set to not go after potential customers
   f. Bankers are able to meet the turnaround times that the consumers expect
   g. Gold monetization helps the Jewellers in reducing transaction (currency hedging, import duty etc.) costs
   h. Refiners can use their existing infrastructure, capital and a Business strategy to increase their reach to improve the quality assurance process time and thereby improving their Business.

i. Upgradation from fire assay method to PGM class detection method is a significant investment for the CPTCs
j. Investment for banks in the quality assurance devices is prohibitive

## 6. Methodology

This research utilizes a combination of three studies: a nation-wide survey-based quantitative study of consumers, including their attributions to gold and investment-sentiment characteristics; a qualitative depth interview-based study of various stakeholders in the gold ecosystem; and a quantitative regression-based analysis of secondary sample survey data across states. The three studies use a combination of analysis techniques to provide a more complete and nuanced understanding of the perceptions regarding gold, the factors that drive these perceptions and the implications that they have for the overall ecosystem. This helps in arriving at possible implications of and suggestions relating to the gold monetization policy in the macroeconomic and sociocultural context.

### 6.1 Consumption characteristics

This study uses a survey-based approach at the national level in an attempt to capture consumer attributions to gold, their investment-sentiment associations with gold, gold purchase activities and others. The survey is divided into the following sections:

a) Associations and attributions: this section looks at the various aspects such as purity and good fortune that are related to gold, and associations such as gold jewellery symbolizing social relationships, gifting of gold, social status associated with gold, and others.

b) Investment and sentiment: this section considers gold along two dimensions, investment which is the use of gold for its monetary value, and sentiment, which refers to value attached to gold due to its symbolic and adornment connotations (which might not be simply a function of its monetary value). The questions in this section look at gold as a part of total assets of the household and jewellery as a proportion of this gold; it also studies locker usage, pledging and willingness to hold assets in paper form.

c) Purchase of gold jewellery: this section largely concerns perceptions of jewellers and jewellery purchase decision making.

d) Product ideas: in this section, consumers are asked about their interest level in various ideas for implementing the gold monetization scheme, among others.

e) Gold monetization scheme: this section looks at the awareness and expectations with regard to the scheme.

f) Demographic details: typical demographic details such as age, gender, income and others are captured in this section.

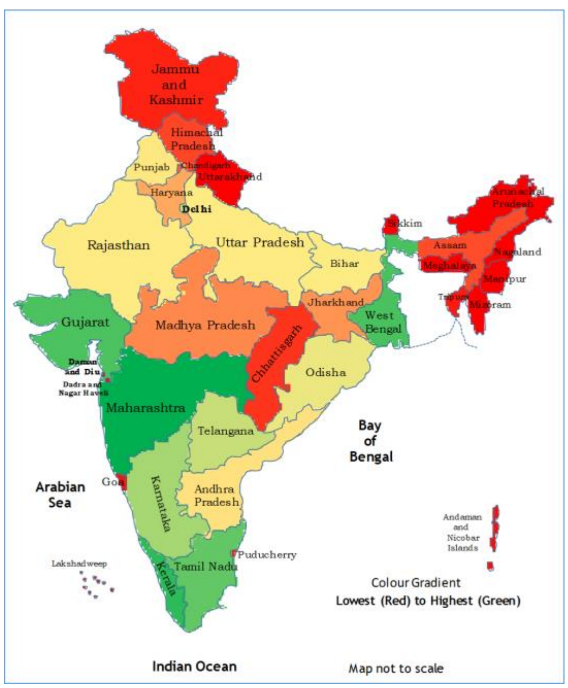
### 6.1.1 Sampling plan

The study uses Stratified Random Sampling (stratification along three dimensions: rural/urban, SEC group and consumption concentration).

Stratification for the first two dimensions is based on an equal sample size for each stratum as given below.

| Segment/Stratum | Rural | Urban |
|---|---|---|
| Lower | | 200 |
| Middle | 200 | 200 |
| Upper | 200 | 200 |

For the dimension of consumption concentration, the parameter used is gold consumption levels by state. For this, we refer to the heat map of consumption levels of gold in India as given below. The proxy metric used to arrive at the heat map is the number of gold jewellery licenses by state. (Please refer to appendix 1 for more details of statewise distribution of gold jewellery licenses.) Based on this, states are divided into four tiers, as given below.



| Sample distribution | 50% | 25% | 15% | 10% |
|---|---|---|---|---|
| Tier | 1 | 2 | 3 | 4 |
| States | Gujarat<br>Maharashtra<br>Kerala<br>Tamil Nadu<br>West Bengal | Delhi<br>Karnataka<br>Telangana | Punjab<br>Rajasthan<br>Bihar<br>Orissa<br>Andhra Pradesh<br>Uttar Pradesh | Haryana<br>Madhya Pradesh<br>Jharkhand |

Based on the above, the planned sampling plan table is shown in appendix 2.

### 6.1.2 Data collection

The screening criterion used is possession of 20 grams of gold. The interview was conducted face to face with the male or female head of the household. The survey was conducted from September 2016 to November 2016. The team leads from the research agency, who handled each state, were trained on the questionnaire (available on request) to guide their team members within each state. Questionnaire was prepared in English, and trained interviewers translated and used the local language as appropriate in order to conduct the interview. Gold being a sensitive subject, we expected issues arising from difficulties in self-revelation. However we attempted to compensate for this through the structure of the interviews and interviewer training.

### 6.1.3 Consumption & Demography - Econometric study

We use two separate specifications to explore the relationship between demographic variables and gold consumption. In the first specification we use demand side estimate of gold consumption to analyze the relationship and the analysis is conducted using a micro level household survey data. For this purpose, we apply the specification of Engel curve as proposed by Working as well as by Leser. An Engel curve is "the function describing how a consumer's expenditures on some good or service relates to the consumer's total resources holding prices fixed" (Lewbel, 2006). Both Working and Leser proposed a linear specification to estimate the Engel curves (Leser, 1963; Working, 1943). Deaton & Ruiz-castillo (1989) also proposed a demographic separability linear model using a 2-stage specification, which is comparable to Working's model. This model was used in a recent study conducted to estimate the gender bias in education expenditure of Indian households (Azam & Kingdon, 2013).

In this model we estimate the heterogeneity in the household consumption by performing a linear regression of the proportion of consumption (household gold consumption expenditure/total household expenditure) of gold against the log of overall consumption expenditure after controlling for household size and demographic variables.

$$\begin{aligned}&Proportion\ of\ gold\ consumption\\&\quad = \alpha + \beta * Log\ total\ consumption\ expenditure + \gamma * Log\ Household\ size + \delta\\&\quad * Demogrpahic\ variables + \varepsilon\end{aligned}$$

In the second specification, we use a supply side estimate of gold consumption, which is the number of licensed jewellers in a state, as a proxy measure. Supply side specification uses state level macroeconomic variables as control variables in determining the effect of sex ratio on aggregate state level consumption.

In order to arrive at the household proportion of gold consumption, we use the National Sample Survey (NSS) data on household expenditure. This survey is conducted every two years and uses stratified random sampling in order to ensure that the distribution of surveyed households is representative of the district level and state level characteristics. The survey spans all 640 districts in all the states and union territories in India and the sampled districts remain the same for every survey. Expenditure data is available at a per capita level for both urban and rural segments. In order to avoid errors in aggregation, we use district household level data for estimating the demographic heterogeneity in gold consumption.

NSS data of the expenditure survey conducted in 2011-12 is used in this study. Survey results for 2013-14 have not been published as of the time of this study. Estimate for sex ratio is available every 10 years from the Census of India data. The latest census was concluded in 2011 and we use this to run the regressions.

#### 6.1.3.1 Demand side consumption estimate

The dependent variable for the OLS multivariate analysis is the annual household gold consumption at a household level, as a proportion of the annual total household consumption.

The demographic heterogeneity in consumption, particularly the gender effect is estimated in four different ways based on household data. Three of these use household level information such as proportion of female members in the household, number of daughters in the household and the household sex ratio (females to males). The fourth specification uses a district level sex ratio measure. The control variables used for both the regressions are log of total annual household consumption as a proxy for household income, household annual education expenditure as a proxy for overall level of education, dummy for religion and a segmental dummy to capture the variation between rural and urban consumption. The list of variables and the corresponding sources are given in the table below. The specification used is as follows:

$$GCP_{ih} = \alpha + \beta_1 SR_{ih} + \beta_2 LTC_{ih} + \beta_3 Urban_{ih} + \beta_4 Rel_{ih} + \beta_5 LHHS_{ih} + \varepsilon_{ih}$$

$$GCP_{ih} = \alpha + \beta_1 SR_{i} + \beta_2 LTC_{ih} + \beta_3 Urban_{ih} + \beta_4 Rel_{ih} + \beta_5 LHHS_{ih} + \varepsilon_{ih}$$

| Variable | Definition and Construction | Data sources |
|---|---|---|
| Gold consumption as a proportion of total consumption (GCP) | This is the proportion of the annual household consumption of gold out of the total household consumption. | NSS |
| Gender effect (SR) [four variants] | 1.Proportion of females in the household<br>2.Number of daughters in the household<br>3.Ratio of number of females to number of males in the household | National Census 2011<br>NSS |

| | | |
|---|---|---|
| | 4.District level sex ratio | |
| Log of annual household consumption (LTC) | This is a proxy measure for the annual household income. This is a derived figure based on the aggregate consumption of the household. | NSS |
| Urban dummy (Urban) | Urban (=1) dummy capturing the sectoral heterogeneity in the households | NSS |
| Religion dummy (Rel) | Religion (=1) dummy capturing the Hindu households in the survey | NSS |
| Log of household size (LHHS) | Log of the total number of members in the surveyed household | NSS |

where *i* refers to the district that household belongs and *h* refers to the household; GCP refers to the proportion of household gold consumption out of total household consumption, SR captures the gender effect as detailed earlier, Urban refers to urban dummy, Rel refers to dummy for Hindu households and LHHS refers to the log of household size.

#### 6.1.3.2 Supply side consumption estimate

The dependent variable for this OLS multivariate specification is the number of licensed jewelers operating per million population in the state as of 2012. We use this estimate to validate our findings from the demand side estimations. We use a cross sectional regression to analyze the effect of sex ratio on supply side proxy of consumption by controlling for per capita income at state level, literacy level, per capita credit availability as a proxy for financial development of the state, and inflation. The list of variables and the corresponding sources are provided in the table below. The specification used is a follows:

$$GCPC_i = \alpha + \beta_1 SR_i + \beta_2 LGDPPC_i + \beta_3 Inf_i + \beta_4 LCredit_i + \beta_5 Lit_i + \varepsilon_i$$

where *i* refers to the state; GCPC refers to the state level gold consumption per capita and SR captures the sex ratio at state level.

| Variable | Definition and Construction | Data sources |
|---|---|---|
| Log of annual household gold consumption (GCPC) | This is a derived variable using the number of jewellery licenses in a state per million population. | India stat |
| Log of GDP per capita(LGDPPC) | This is the log of the GDP per capita of India states for the year 2011 in INR constant prices. | Ministry of Statistics Program and Implementation (MOSPI) |
| Sex Ratio(SR) | This is the sex ratio of the state | National Census 2011 |
| Inflation(Inf) | This is based on the average monthly CPI of the respective state. | MOSPI |
| Log of Credit Supply(LCredit) | This measure captures the log of per capita total credit supplied in the states by the banks in the year 2010 in INR 10 millions | Planning commission |

| | | |
|---|---|---|
| Literacy(Lit) | This captures the literacy level in the state and we use this as a proxy for the overall sophistication of the state. | National Census 2011 |

### 6.2 Stakeholder perspectives - Interview based study

We interviewed two key stakeholders: top management of Banks and Refineries in order to understand their perspectives with regard to the policy, the limitation with regard to design and implementation and future measures to improve the policy. The list of questions (available on request) was arrived at using preliminary interviews with bankers and secondary research on the policy parameters. Refer to appendix 3 for the list of banks and refiners.

The objective of this study is to gather the perspectives from stakeholders across the gold ecosystem regarding the challenges faced in implementation of the gold monetization policy as well as the implications of the new policy. The banks interviewed satisfy the criterion of being authorized by the RBI to imports gold bullion as well as to mobilize gold through GMS. The cumulative assets under management of the banks interviewed for this study is more than 50% of the gold bullion trade (according to Industry analyst). The five refiners interviewed for the study are among the biggest in the industry by capacity as well as turnover and moreover they are amongst the ten refiners authorized by the RBI to undertake refining activities for GMS (Ministry of Finance, 2016; RBI, 2016).

## 7. Data and analysis

### 7.1 Consumption characteristics

The following tables indicate the actual sampling plan used for the survey of 1171 households across 10 states.

| States | Urban SEC A1 Age in years 25-34 | 35-49 | >=50 | A2 Age in years 25-34 | 35-49 | >=50 | A3 Age in years 25-34 | 35-49 | >=50 |
|---|---|---|---|---|---|---|---|---|---|
| Tamil Nadu | 10 | 18 | 11 | 16 | 24 | 15 | 11 | 10 | 12 |
| Kerala | 10 | 11 | 10 | 14 | 15 | 12 | 9 | 10 | 15 |
| Gujarat | 14 | 11 | 10 | 14 | 13 | 10 | 8 | 17 | 8 |
| Maharashtra | 13 | 11 | 4 | 15 | 10 | 5 | 15 | 8 | 8 |
| West Bengal | 4 | 5 | 4 | 4 | 8 | 4 | 8 | 9 | 2 |
| Total | 51 | 56 | 39 | 63 | 70 | 46 | 51 | 54 | 45 |
| Telangana | 8 | 5 | 5 | 5 | 5 | 7 | 5 | 3 | 8 |
| Karnataka | 5 | 5 | 5 | 6 | 5 | 5 | 6 | 4 | 5 |
| Delhi | 5 | 6 | 6 | 6 | 6 | 7 | 4 | 2 | 5 |
| Total | 18 | 16 | 16 | 17 | 16 | 19 | 15 | 9 | 18 |
| Bihar | 5 | 5 | 5 | 4 | 5 | 7 | 5 | 7 | 6 |
| Punjab | 6 | 6 | 7 | 6 | 7 | 5 | 5 | 5 | 5 |
| Total | 11 | 11 | 12 | 10 | 12 | 12 | 10 | 12 | 11 |

| States | Rural SEC R1 Age in years 25-34 | 35-49 | >=50 | R2 Age in years 25-34 | 35-49 | >=50 |
|---|---|---|---|---|---|---|
| Tamil Nadu | 10 | 8 | 10 | 10 | 10 | 11 |
| Kerala | 9 | 11 | 13 | 10 | 9 | 12 |
| Gujarat | 10 | 8 | 15 | 10 | 12 | 11 |
| Maharashtra | 9 | 9 | 9 | 11 | 12 | 9 |
| West Bengal | 6 | 7 | 3 | 2 | 6 | 4 |
| Total | 44 | 43 | 50 | 43 | 49 | 47 |
| Telangana | 5 | 6 | 5 | 5 | 5 | 7 |
| Karnataka | 5 | 5 | 5 | 3 | 6 | 6 |
| Delhi | 6 | 9 | 6 | 10 | 3 | 5 |
| Total | 16 | 20 | 16 | 18 | 14 | 18 |
| Bihar | 4 | 5 | 5 | 3 | 8 | 5 |
| Punjab | 9 | 6 | 5 | 4 | 5 | 5 |
| Total | 13 | 11 | 10 | 7 | 13 | 10 |

The sample consisted of 62% of urban households. Among the respondents, 65.6% of the respondents were male.

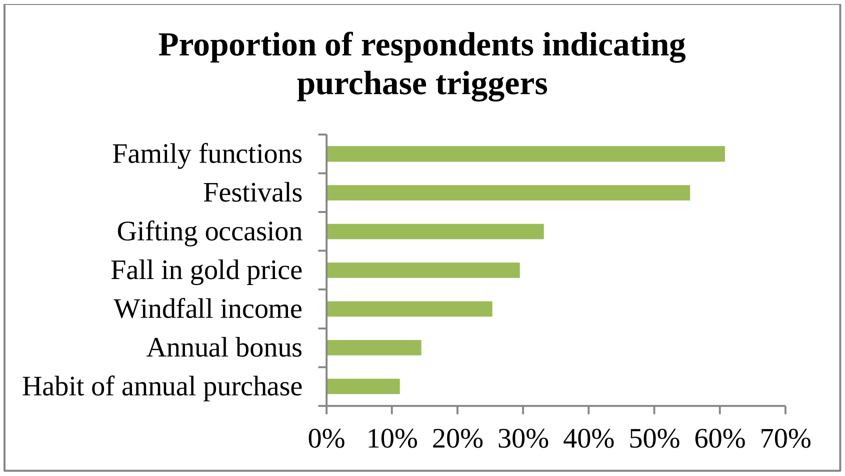
### 7.1.1 Findings and implications

The analysis approach uses consumer survey data to determine support for hypotheses on attributions and associations, as well as determination of consumer heterogeneity. The econometric analysis adds to the understanding of heterogeneity and gives greater clarity on the factors associated with higher household gold consumption. These factors are not easily elicited through a direct survey. The viewpoints from bankers, refiners and consultant allow for validation of hypotheses relating to the entire ecosystem.

**Overall**

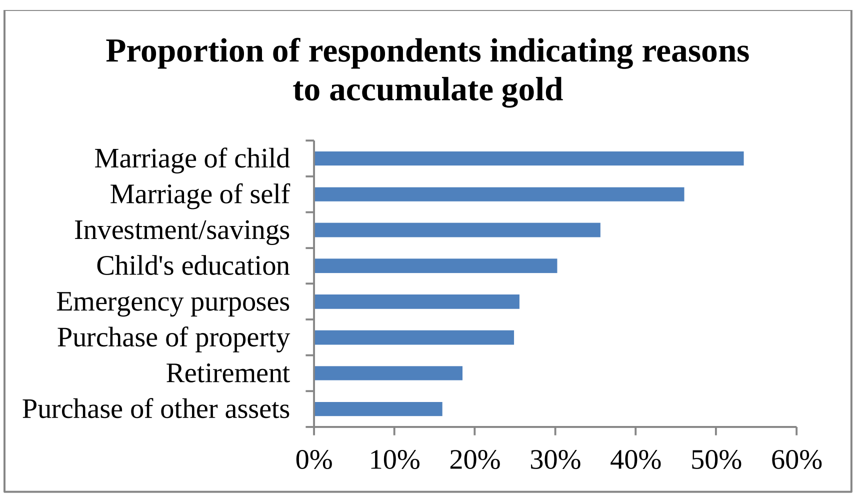
On average respondents indicated a high tendency to associate gold with purity and other aspects such as luck and good health. They also have a high propensity to purchase gold during family functions and festivals, supporting hypothesis 1a and 2d with regard to deeply entrenched mindsets and importance attached to gold during social occasions. Their associations with gold lead to low willingness to sell gold received as gift which supports hypothesis 2a which highlights the symbolic value of gold that leads to low willingness to part with gold. However they are willing to exchange the gold which directly supports hypothesis 2b. Hypothesis 2c on the high liquidity and safety association of gold (which is also not considered as having any substitute) was clearly supported. Consumers place significant trust in jewellers with whom they have a long term relationship, directly supporting hypothesis 2g. Across consumers, there exists a strong belief in the inherent value of gold, which cannot be justified merely through its monetary value.

More than 50% of respondents considered family functions and festivals to be triggers for gold purchase, indicating ingrained the habit arising from these triggers.




*Proportion is calculated for 1171 respondents.

Marriage of child and marriage of self form the most important reasons to accumulate gold.




*Proportion is calculated for the 595 respondents who affirmed that they purchase gold in small quantities to accumulate.

**Rural vs Urban**

Rural and urban segments differ in several ways:

- Willingness to part with gold is lower in rural segment as compared to that of urban segment - urban consumers are more comfortable holding gold in paper form
- Urban consumers consider gold as more of investment and less for adornment purposes, whereas rural consumers consider gold as a form of both investment and adornment. This finding goes against our prior hypothesis of considering rural gold consumption as more of an investment than sentiment.
- In both rural and urban segments, high openness to pledging gold is correlated with high level of comfort with holding one's gold assets in the form of paper, with the correlation being stronger in the rural segment. This finding collectively supports hypotheses 2f (preference for pledging over selling) and 2h (rural consumers showing a higher tendency to consider gold as investment rather than sentiment), giving a nuanced picture of consumption habit.

Hence, enabling loans to be taken against GMS deposit might be important in targeting rural consumers. Also, rural segment shows higher income dependence of gold purchase, which implies that targeting is most effective when coupled with instances of inflow of cash.

**Gender**

- There is no major difference between men and women in terms of specific parameters related to possession of gold, such as attitude towards holding gold asset in paper form, belief that there is no substitute for gold as an asset, and preference for pledging to sell.

- Women who consider there is no substitute for gold as an asset also tend to be comfortable holding gold in the form of bond, indicating a willingness to consider gold as investment in the form of both solid gold and paper. Such an association is weaker in the case of men.

This implies that one way of implementing GMS could be to target women, by highlighting that GMS is as good as and better than possessing solid gold. Further support for this comes from the recent order by the Supreme Court of India, which provides exclusive control of *streedhan* gold in the hands of the woman concerned (Rajagopal, 2015).

**Income level**

- Higher income is correlated with higher proportion of assets held in gold and higher share of gold held in jewellery form, especially in the urban segment.
- This arises from a higher tendency to accumulate gold at higher levels of income, especially in the urban segment. The reasons for such accumulation are largely investment based, and the high proportion of jewellery among the gold possessed by the higher income group can be explained if a large part of such accumulation is in the form of jewellery. However, since the purpose of purchase is investment, such jewellery is a good target for GMS.
- The correlation of income with comfort with holding one’s asset in paper form is high for the urban segment, whereas it is not significant for rural segment. This does not lend support to hypothesis 2h.

This could imply that higher income group in urban segment is the most feasible target for GMS. However, since they do possess a large proportion of their gold in jewellery form, the communication campaign must highlight the investment aspect for which jewellery is being purchased, and reduce the salience of adornment purpose.

### 7.1.2 Econometric study

The table below gives the results of the cross sectional OLS multivariate regression done using the NSSO data for the survey conducted in 2011-2012[5].

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| VARIABLES | gcr | gcr | gcr | gcr |
| Prop of females in | 0.0418*** | | | |
| the household | (0.0101) | | | |
| Number of daughters | | 0.00384** | | |
| | | (0.00153) | | |
| District sex ratio | | | 0.000138*** | |
| | | | (3.94e-05) | |
| Household sex ratio | | | | 0.00465** |
| | | | | (0.00189) |
| Log of annual household | 0.0669*** | 0.0669*** | 0.0679*** | 0.0656*** |
| consumption | (0.00458) | (0.00459) | (0.00463) | (0.00458) |

[5] We have conducted regression for 2007-08 and 2009-10 NSS data and the results of the OLS multivariate regression for the gender effect hold consistently. However it must be noted that the sex ratio data is available only every ten years, the latest being 2011.

| | | | | |
|---|---|---|---|---|
| Urban dummy | -0.0270*** | -0.0270*** | -0.0261*** | -0.0259*** |
| | (0.00356) | (0.00356) | (0.00358) | (0.00353) |
| Religion dummy (Hindu) | 0.00958** | 0.00981** | 0.00972** | 0.00898* |
| | (0.00467) | (0.00468) | (0.00468) | (0.00469) |
| Log Household size | -0.0648*** | -0.0729*** | -0.0662*** | -0.0630*** |
| | (0.00453) | (0.00576) | (0.00459) | (0.00455) |
| | | | | |
| Constant | -0.617*** | -0.589*** | -0.732*** | -0.588*** |
| | (0.0507) | (0.0499) | (0.0681) | (0.0500) |
| State Fixed Effects | Yes | Yes | Yes | Yes |
| Observations | 5,278 | 5,278 | 5,276 | 5,155 |
| R-squared | 0.223 | 0.221 | 0.222 | 0.218 |

Robust standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

The gender effect is significant across both the specifications and the coefficient is positive implying higher consumption amongst the households with larger proportion of females. Higher consumption among districts with higher child sex ratio indicates that the households start accumulating gold from a very early age of the child. Based on the results of the regression for the year 2011-12, the heterogeneity is significant at rural/urban level as well as for Hindu households.

In the case of gold consumption, the expenditure might be understated and this has been highlighted in a recent study on household wealth allocation in India (Badarinza, Balasubramaniam, & Ramadorai, 2016). Since the NSS survey results are based on a revealed consumption expenditure amongst the participating households, the estimates are prone to corrections (Kumar, 2011; Sinharay, 2013).

In order to ensure that the above result on the gender effect is robust, we have conducted an analysis of consumption based on the supply side as well. The table below depicts the results of the cross sectional regression performed from the supply side. The columns in the table are stepwise regression in an increasing order of control variables.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| VARIABLES | Model 1 | Model 2 | Model 3 | Model 4 |
| Sex ratio | 5.874*** | 6.241*** | 6.557*** | 6.740*** |
| | (1.851) | (1.642) | (1.660) | (1.895) |
| Log GDP per capita | 1.670*** | 1.636*** | 1.225 | 1.229 |
| | (0.250) | (0.264) | (0.754) | (0.776) |
| Inflation | | -0.0514 | -0.0690 | -0.0788 |
| | | (0.0648) | (0.0753) | (0.0970) |
| Credit supply | | | 0.214 | 0.230 |
| | | | (0.316) | (0.339) |
| Literacy | | | | -0.00409 |
| | | | | (0.0179) |

| | | | | |
|---|---|---|---|---|
| Constant | -55.98*** | -57.85*** | -57.22*** | -58.26*** |
| | (13.30) | (11.69) | (11.11) | (11.81) |
| | | | | |
| Observations | 20 | 20 | 20 | 20 |
| R-squared | 0.780 | 0.785 | 0.791 | 0.791 |

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The results indicate a significant relationship on the sex ratio to the level of gold consumption. The results imply that there is higher propensity to consume gold in those states where there is a higher proportion of females in the population.

This result is in line with literature which suggests that gold is one of primary components of streedhan, indicating the higher economic burden imposed on families with women (Dempster, 2006; Srinivasan, 2005). A recent study done on the household savings landscape in India indicates that the household wealth is skewed towards non-financial assets, particularly gold. Moreover the study finds that households with more number of daughters have higher wealth allocation to gold (Badarinza et al., 2016).

### 7.2 Interview based study

#### 7.2.1 Banks

Banks would be incentivized to take up this policy initiative if there is adequate compensation for the risks borne by them. Since this is a process intensive initiative, the banks are wary of the operational risks aspect as well in addition to the liquidity and currency risks associated with the gold deposits. Based on the discussions with bankers, the following section presents the key limitations and potential improvements from the bank's perspective for different options of deposits.

*Short term deposits*

Given the current process in banks, *"If a jeweller takes GML, it will pay back in INR after 6 months, which means the bank has to convert it to bullion at the end of every 6 months/or keep the gold in its book;, both options are not attractive for banks."* This supports hypothesis 2g regarding the potential reduction in jeweller's transaction costs due to gold monetization. In addition, since the gold that has to be paid back to the customer is inclusive of the taxes prevailing at that point, the bank runs the risk of policy changes as well. These findings reject hypothesis 1d which states that existing incentives are sufficient to draw bankers into the scheme.

One of the suggestions to hedge the risk was, *"bank goes long in a XAU/USD*[6] *forward (gold forward, which costs them 1- 1.5% per annum) and goes long on a USD/INR currency forward which will cost them 6% per annum. This is because, they would need to pay the customer in gold at the end of the scheme, and to buy gold which is dependent on the value of USD at that point, and there is a currency risk as well. To hedge this, they go long on USD and long on the commodity. Total cost per annum comes to a minimum of 7.5% per annum. Whereas, today the bank is able to mobilize deposits at an average rate of 7% to 7.5%."* Hence banks are disincentivized to take up GMS when deposits can be mobilized in a more convenient way at lower or equal rates. The above computation does not take into account the effect of taxes/duties, and hence that risk is not accounted for.

*Medium and long term deposits*

For medium term and long term deposits, the bankers were of the opinion that these are fraught with operational and reputational risk. A customer of the bank has to deal with an entity which is not directly linked to the bank, and any issue with respect to purity and quantity would result in customer dissatisfaction which will be directed towards the relationship that the customer has with the bank. This seems to support hypothesis 1e (on the relatively low importance of gold to the overall business of the bank) and 2a (on the current process of purity checking being less than ideal), and reject 1f (which states that banks are satisfied with the CPTC/refiner network in place). Banks would promote GMS-based products if there is more control and clear separation

[6] XAU/USD refers to the gold exchange rate with reference to US dollar and USD/INR refers to the dollar exchange rate with reference to Indian rupee. 1 USD is approximately equivalent to 65 INR.

or mitigation of risks relating to the operations of CPTCs. This finding rejects hypothesis 1d which states on the attractiveness of the scheme given its current incentive structure.

*Perspectives on implementation*

With regard to GMS, banks naturally perform a cost-benefit analysis. As one of the bankers pointed out, *"2.25% of the deposited amount is to be given to customers and 1% forms the cost of distribution. As a result, GMS would require subsidization by RBI if it is to be successful"* and thus rejects hypothesis 1d again. This is especially the case because the asset is on the bank's books and the bank has to bear CRR and SLR. Thus, overall, the cost comes to 4.25%, which makes gold metal loan (GML) a better option from the bank's perspective.

In terms of the options for collected gold, firstly allowing gold as (a portion of) CRR does not seem to be a possibility since RBI is unlikely to allow this, which directly counters hypothesis 1a. Secondly, gold coins cost 9%, hence it is not cost effective to sell coins from the GMS gold. Allowing GMS collection to be counted as part of priority sector activities might help, but most banks are already covering the priority sectors. This per se supports hypothesis 1b.

Similarly, one issue that bankers foresee is *"the difficulty in meeting people's expectations of short turnaround time. Even with highest possible efficiency, 7 days will be required for the refinery to get back. Unlike this, a jeweller takes 7 minutes to assess purity, and people are more familiar with purity assessment at jewellers."* This seems to reject hypothesis 2f on the ability of bankers to meet customer expectations of turnaround times.

### 7.2.2 Refiners & CPTCs

Refiners believe that *"they are only intermediaries and service providers, and that bankers need to own the scheme and have the risk appetite for it to pick up."* One issue that refiners point out is that *"a CPTC or refinery is like a workshop which means that consumers will not like the experience of visiting a CPTC directly for the first stage of purity assessment"* which supports hypothesis 2a (the current process of customer walking in to CPTC for purity checking is not preferable). Another issue is that bankers have very limited knowledge of the gold industry, since it requires process specialization. This seems to again support hypothesis 1e (that gold constitutes only a small part of the business of banks).

In terms of the role of refiners, they do agree that they can own CPTCs (many of them do) but on the whole it is not viable, especially in rural areas where consumers are more spread out. Hence, refiners suggest that collection of gold has to be through jewellers. Moreover, refiners can give exact purity level, which is the advantage they have over CPTCs. Collection needs to be allowed through bank, jeweller or CPTC. CPTCs can be refiner-owned, bank-owned or independent, although consumers are likely to prefer bank-owned CPTCs supporting hypothesis 2b which states that integration of quality assurance process with banks will help increase process efficiency.

Banks and refiners have formed tie-ups in order to conduct common refining activity. For refiners, public sector banks tend to be more preferred due to their large networks and higher public trust in these banks. There is the risk that refiners face in terms of quality of gold they receive (CPTC certifies a purity level of x% and refiner finds it to be less than x%), in which case refiner might have to bear the cost to some extent. But refiners are willing to handle that margin if sufficient volumes are there. Overall these comments support hypothesis 2h regarding refiners being able to use their existing infrastructure to improve quality and overall business.

### 7.2.3 Perspective from independent research firm

In this section we document the responses of an independent research firm on the status of GMS and possible improvements.

Public sector banks are better placed to do GMS for two reasons, according to the industry consultant:

- *"There are layoffs happening at private sector due to the recent NPA crisis and they are currently not interested in a process intensive product"*
- *"Public sector banks are not as creditworthy as private sector banks and hence they do not receive gold from suppliers. This translates to their asset side as well where they are not able to revive their Gold metal loan schemes. Hence if they are able to raise gold from domestic market through GMS, then they can be active in GML as well."*

The above aspect will drive the private banks to enter the fray since they will see that public sector banks are able to mobilize gold through GMS in a significant manner and will drive competition which will be beneficial for the scheme. Once the channel is built, private banks will enter. *"For example, in gold imports, public sector banks were the major players earlier, but* *over time private banks realized the presence of a lucrative opportunity and overtook the public sector banks in this business."* This finding rejects hypothesis 1c that new payment banks and small banks will step into the fray first, rather than public sector banks. The following section summarizes and provides a snapshot of the hypotheses and whether supported in a tabular form.

### 7.3 Summary of hypotheses

With regard to consumers, hypotheses 1a, 1b, 2a-2g, 3a and 3b are supported. However, hypotheses 2h and 3c are not supported.

With regard to bankers, hypotheses 1b, 1e, 1f, 2a-2c, and 2e-2j are supported while hypotheses 1a, 1d, 1d and 2d are not supported.

## 8. Conclusions

This research has brought together perspectives of all the major stakeholders in the gold ecosystem. Besides gathering the viewpoints of bankers and refiners, the study has arrived at a comprehensive set of insights on consumers. This view of consumers has been augmented through an econometric analysis of consumption data from both demand side and supply side. Taken together the research provides insights across the following dimensions:

### 8.1 Consumption attitudes

- Consumer attribution towards gold varies along demographic parameters. For instance, urban consumers have a higher propensity to attribute gold to investment rather than sentiment. There are also more open to holding gold in a paper asset form as compared to the rural consumers.

- Higher income consumers especially in the urban segment have a higher tendency to purchase gold to accumulate.
- Considering factors which would indicate a preference for treating gold as an investment, a state wise analysis shows that Karnataka, Telengana and Tamil Nadu are the top three. These states could be considered to further deepen the monetization scheme.

### 8.2 Gender and gold consumption

- There is a significant positive relationship between sex ratio and gold consumption per capita, indicating that a higher number of women is associated with a higher propensity to consume gold.
- Customers with higher level of education tend to have lower level of gold consumption implying the difference in choices depending on the level of sophistication.
- Households in the urban segment have a lower gold consumption propensity as compared to the rural counterparts keeping all other variables constant such as income.
- Hindu households have a higher propensity to consume gold as compared to other religions.

### 8.3 Banks

- Banks have proposed to mitigate the additional risk that the gold deposit would bring to their books in terms of currency and liquidity risks. The current incentive structure is not adequate for banks to take up this scheme.

- Most of the suggestions regarding operationalization indicate that private banks will be reluctant to take up this scheme. Public sector banks are better placed given their branch network and the ability to leverage their long standing relationship with a larger section of the society. In the long run this will develop a supply chain which can be further tapped by the entire banking system.
- Since per capita holding is higher in the urban segment, this product can be attractive to higher income consumers for their portfolio and wealth management.

**8.4 Refiners, CPTCs and jewellers**

- Refiners consider themselves intermediaries but better than CPTCs. Banks consider CPTC as a huge operational risk given that the consumer touch point with CPTC might not be sophisticated enough.
- Jewellers have the unique advantage of being a customer touch point for gold consumption but they are not directly involved in the scheme as it stands.

Given the diversity in the associations and attributions to gold across consumer groups, a one-size-fits-all policy does not work for consumers. It is essential to segment consumers on the basis of attributes such as willingness to part with gold for investment purpose after identifying the characteristics of such consumers. This will allow for targeted communication and other forms of targeted intervention that are more likely to be effective rather than laying out a general scheme. Moreover, the stakeholders in the ecosystem have differing viewpoints with respect to the sharing of responsibilities. A closer collaboration between all stakeholders is critical for the success of the gold monetization scheme due to the transformative nature of the policy and its far-reaching impact on each of the stakeholders. This would necessitate suitable incentivization of all players, as well as appropriate mechanisms for risk sharing and/or risk mitigation. Developing specific capabilities for handling the GMS process efficiently at each stage by the corresponding party is also critical. The government needs to act effectively in terms of communicating the merits of the scheme to the consumers, and to enable the stakeholders to work in tandem.

Thus, the paper contributes to the literature on government policy action in order to bring about systemic changes, by studying the perspective of various stakeholders. On one hand, the associations and attributions of consumers, and other the other, the concerns and preferences of bankers and refiners, are highlighted in an integrative manner. Indeed, attending to consumer groups with diverse attitudes and behaviour and combining the interests of various stakeholders form the two main dimensions to implementing the GMS effectively and efficiently.

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Appendix 1
Number of Jewellery licenses by state

| States/ Union Territories | Number of Gold jewellery licenses |
|---|---|
| Andaman and Nicobar Islands | 10 |
| Andhra Pradesh | 197 |
| Arunachal Pradesh | 0 |
| Assam | 66 |
| Bihar | 217 |
| Chandigarh | 89 |
| Chhattisgarh | 46 |
| Dadra and Nagar Haveli | 5 |
| Daman and Diu | 4 |
| Delhi | 479 |
| Goa | 15 |
| Gujarat | 1040 |
| Haryana | 148 |
| Himachal Pradesh | 61 |
| Jammu and Kashmir | 31 |
| Jharkhand | 129 |
| Karnataka | 615 |
| Kerala | 1179 |
| Lakshadweep | 0 |
| Madhya Pradesh | 119 |
| Maharashtra | 1393 |
| Manipur | 0 |
| Meghalaya | 0 |
| Mizoram | 0 |
| Nagaland | 0 |
| Odisha | 297 |
| Puducherry | 27 |
| Punjab | 202 |
| Rajasthan | 204 |
| Sikkim | 0 |
| Tamil Nadu | 933 |
| Telangana | 462 |
| Tripura | 22 |
| Uttarakhand | 0 |
| Uttar Pradesh | 213 |
| West Bengal | 1050 |

*Data was available for undivided Andhra Pradesh. Hence this was split for Telangana and Andhra Pradesh in the ratio of 0.7:0.3 based on author estimates.

Appendix 2

Sample split by Urban and Rural

| Variables | Income Group | | A3 | | | A2 | | | A1 | | | Geography Wise and State Wise |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Age Group | | 25 to 35 | 35 to 50 | 50 and above | 25 to 35 | 35 to 50 | 50 and above | 25 to 35 | 35 to 50 | 50 and above | |
| Tier 1 | Gujarat | Urban | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 90 |
| | Maharashtra | Urban | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 90 |
| | Kerala | Urban | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 90 |
| | Tamil Nadu | Urban | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 90 |
| | West Bengal | Urban | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 90 |
| | Sub-Total | | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 450 |
| | Sub-Total | | 150 | | | 150 | | | 150 | | | |
| Tier 2 | Delhi | Urban | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 45 |
| | Karnataka | Urban | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 45 |
| | Telangana | Urban | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 45 |
| | Sub-Total | | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 135 |
| | Sub-Total | | 45 | | | 45 | | | 45 | | | |
| Tier3 | Bihar | Urban | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 45 |
| | Punjab | Urban | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 45 |
| | Sub-Total | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 90 |
| | Sub-Total | | 30 | | | 30 | | | 30 | | | |
| Sub-Total | | | | | | | | | | | | 675 |

| Variables | Income Group | | R2 | | | R1 | | | Geography Wise and State Wise |
|---|---|---|---|---|---|---|---|---|---|
| | Age Group | | 25 to 35 | 35 to 50 | 50 and above | 25 to 35 | 35 to 50 | 50 and above | |
| Tier 1 | Gujarat | Rural | 10 | 10 | 10 | 10 | 10 | 10 | 60 |
| | Maharashtra | Rural | 10 | 10 | 10 | 10 | 10 | 10 | 60 |
| | Kerala | Rural | 10 | 10 | 10 | 10 | 10 | 10 | 60 |
| | Tamil Nadu | Rural | 10 | 10 | 10 | 10 | 10 | 10 | 60 |
| | West Bengal | Rural | 10 | 10 | 10 | 10 | 10 | 10 | 60 |
| | Sub-Total | | 50 | 50 | 50 | 50 | 50 | 50 | 300 |
| | Sub-Total | | 150 | | | 150 | | | |
| Tier 2 | Delhi | Rural | 5 | 5 | 5 | 5 | 5 | 5 | 30 |
| | Karnataka | Rural | 5 | 5 | 5 | 5 | 5 | 5 | 30 |
| | Telangana | Rural | 5 | 5 | 5 | 5 | 5 | 5 | 30 |
| | Sub-Total | | 15 | 15 | 15 | 15 | 15 | 15 | 90 |
| | Sub-Total | | 45 | | | 45 | | | |
| Tier3 | Bihar | Rural | 5 | 5 | 5 | 5 | 5 | 5 | 30 |
| | Punjab | Rural | 5 | 5 | 5 | 5 | 5 | 5 | 30 |
| | Sub-Total | | 10 | 10 | 10 | 10 | 10 | 10 | 60 |
| | Sub-Total | | 30 | | | 30 | | | |
| Sub Total | | | | | | | | | 450 |

Appendix 3

| Banks |
|---|
| State Bank of India |
| HDFC Bank |
| Kotak Mahindra Bank |
| Axis Bank |
| Yes Bank |
| State Bank of Travancore |

*Designations not indicated for anonymity

| Refiners |
|---|
| MMTC PAMP |
| Shirpur Gold Refinery |
| Edelweiss Refinery |
| Gujarat Gold Centre |
| Chemmannur Refinery |

*Designations not indicated for anonymity

| Industry Consultants and NBFCs | Designation |
|---|---|
| Thomson Reuters | Lead Analyst – GFMS Research & Forecasts |
| Muthoot Finance | |
| Indel Money | |

*Designations not indicated for anonymity