INDIAN INSTITUTE OF MANAGEMENT
AHMEDABAD • INDIA

Research and Publications

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

Priya Narayanan, Balagopal Gopalakrishnan, Arvind Sahay

W. P. No. 2017-01-02
January 2017

INDIAN INSTITUTE OF MANAGEMENT
AHMEDABAD-380 015
INDIA

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

Priya Narayanan, Balagopal Gopalakrishnan and Arvind Sahay
Indian Institute of Management, Ahmedabad

Abstract

India is the second largest consumer of gold in the world and gold is a major contributor to the current account deficit. Much of the gold goes out of circulation and is not available to support economic activity. To encourage consumers to bring the gold back into circulation, the government of India instituted the Gold Monetization Policy in 2015. This research views the Gold Monetization Policy in India through the lens of consumer associations with gold, as well as the banker and refiner perspectives on implementation challenges. The success of this policy is important for the country to better manage its current account balance, in a milieu where gold consumption holds sociocultural importance. The research uses an empirical approach to analyse how various stakeholders have approached the policy, and provides suggestions to increase uptake of the policy. It employs a mixed method approach to understand the motivations and barriers faced by various stakeholders in the gold ecosystem.

First, a nationwide survey-based study of 1171 households, across 10 states that constitute approximately three-quarters of annual national gold consumption, was conducted to understand the consumer associations with and attributions related to gold. This shows that family functions and festivals to be triggers for gold purchase, indicating ingrained the habit and planned accumulation. There is also high liquidity and safety association of gold (which is also not considered as having any substitute) along with a clear reluctance to sell gold received as a gift. Rural consumers are more reluctant to part with gold as compared to urban but are also ready to pledge gold as collateral suggesting requirement related liquidity use of gold.

Second, an interview based study was conducted with senior management of 6 banks, 5 refiners and one industry consultant to understand the challenges and implications of the policy for members of the gold ecosystem. Discussions with these stakeholders clarified that banks would promote products based on this policy if they had more control on the process and if there was clear separation of risks or effective mitigation of risks relating to the operationalization of the policy. Finally, an econometric analysis of gold consumption and its potential determinants was conducted using household data from all 640 districts of the National Sample Survey for 2011-12. The analysis shows that propensity to consume gold is positively correlated with proportion of females in the household and with number of daughters in the household. Also, ceteris paribus, rural households have a higher propensity to consume gold, and Hindu households have a higher propensity to consume gold.

Clearly, increasing the effectiveness of the Gold Monetization Policy depends on a deeper understanding of consumers' interactions with and sentiments towards gold. The effectiveness of the policy also depends on recognizing the challenges faced and incentives required by banks, refiners and other stakeholders in implementing this policy. This research is an attempt at developing such an understanding.

Keywords: gold, gold monetization, policy, gold consumption, policy implementation

---

* The views expressed in this paper are solely those of the authors and do not represent the views of the Indian Institute of Management, Ahmedabad. Contact emails: priyan@iima.ac.in, balagopalg@iima.ac.in ,asahay@iima.ac.in. The authors are thankful to India Gold Policy Centre which is funded by the World Gold Council, for the research grant approved to execute this project. Sections of this paper were presented to the Ministry of Finance, Government of India. We thank Prof. Abhiman Das, Indian Institute of Management Ahmedabad, for helpful comments and suggestions on the econometric analysis.

1. Introduction

India is the second largest consumer of gold in the world as per 2015 demand trend estimates from World Gold Council (WGC) (World Gold Council, 2016b). Reports indicate that the unconfirmed public stock of gold in India is close to 25,000 tonnes (Bhayani, 2016). This is approximately 15% of all the gold that has been mined till date worldwide (World Gold Council, 2016a). Compared to other countries, while the household gold holding is high, 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.

One of the consequences of this high consumption of gold and the high level of stickiness is that India is 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 for these goals was the 2015 Gold Monetization Scheme (GMS) by the Government of India (GoI, 2015). This 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 the time of writing this paper, 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% 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 policy implementation of the Gold Deposit Scheme (GDS), the challenges faced and potential improvements, and suggest measures to increase the takeup rate among all stakeholders. The stakeholders in the gold ecosystem whom we study are consumers, bankers and refiners. 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

[1] Alternatively used to refer to GMS for the purposes of this paper

incentive structure, risk mitigation and process issues. Based on these studies, we suggest potential consumer segments for targeted policy action and recommend suitable implementation measures for bankers and refiners.

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 the recent past regarding the need for 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).

This paper is organized as follows. Section 2 presents the literature on gold consumption and the gold ecosystem in India. 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. The next section lays out the findings. The final section presents implications and recommendations.

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 never 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 habits and how to either change them or use them to the benefit of the GMS.

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 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 GoI authorities. 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.

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 and Dhanteras when the day is considered auspicious for bringing wealth home. Other festivals like Ugadi and Pongal also lead to gold purchases, when 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. These can be considered in the light of various mechanisms of preference reversal such as attraction, similarity and compromise (Tsetsos, Chater, & Usher, 2015). 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. Here, the trigger of a bonus fits into the goal of building a jewellery collection. 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[2], 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

[2] 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.

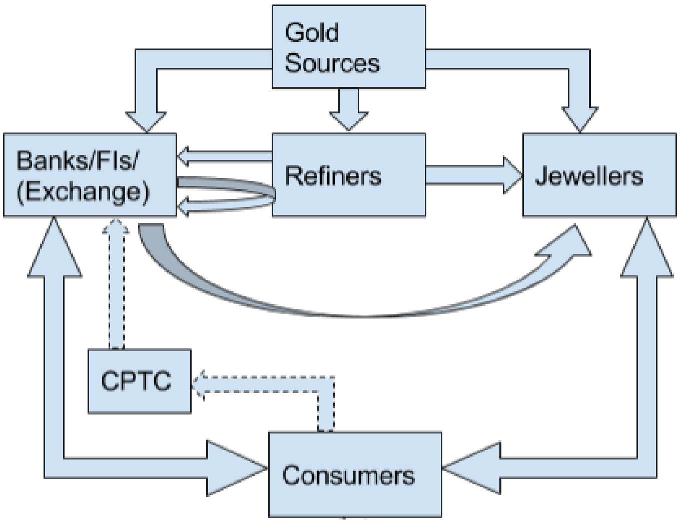
do not part with it in exchange for other forms of investment, possibly because they are affected by the emotional attachment that they feel towards the gold after it is purchased. Gold is viewed as an asset to be accumulated, and in some way different from other assets. Yet, it would be difficult to 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 at the Business Model Design (BMD) and roll-out processes of GMS to understand the gaps in detail. Prior to that, it is important to note the role played by RBI, which is the regulator in terms of the policy framework and roll outs.

Gold ecosystem

Gold monetization hinges on three key stakeholders: consumers, banks and quality assurance agents. The figure below 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 necessary to incentivize the banks to take up this policy.



Literature on BMDs classifies them as Efficiency-Based, Perceived Value-Based, Network Value-Based and Network Efficiency-Based (Chatterjee, 2013). Amongst these BMDs, the Network Efficiency based model, is the most suitable 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. 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 BMD 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 along with the consumer to provide an effective and efficient service. It is imperative in this model to convince the stakeholder 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.[3]

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 (MLTD) which

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

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.

Another aspect to note is that the Indian banking system is going through a period of stress given the recent Non Performing Assets (NPA) crisis (Ernst and Young, 2015). Hence there is strain on bank profitability and market valuations. In addition, the impending Basel 3 regulations are expected to be rolled out in phases wherein banks are supposed to raise substantially high additional capital to comply with the regulations (Basel Committee On Banking Supervision, 2011). Given this scenario, Scheduled Commercial Banks (SCB) might stay away from the task of mobilizing gold. RBI announced the issuance of licenses to Payment Banks (RBI, 2015a) and Small Banks (RBI, 2015b) in 2015. These entities do not have a legacy portfolio with issues such as NPAs, and are potential targets for statutory gold mobilization, for at least part of the new deposits that are mobilized. Even Regional Rural Banks (RRB) could be tasked with part of the responsibility given their large rural networks. Given that the gold is available across India and is widely dispersed, it will be beneficial to leverage the network potential of formal banking channels beyond SCBs to mobilize gold.

In the context of the above discussion, one of the ways to ensure a new BMD is implemented is to give the responsibility to new entities or entrepreneurial firms, which do not suffer from inertia and are more nimble (Zott & Amit, 2007). Moreover, such firms are willing to take advantage of technology to disrupt the existing status quo. Hence the above proposal to attribute a larger responsibility to the newly licensed banking firms compared to the SCBs might pay dividends in terms of gold mobilization. Since these firms are in the test phase, it will be beneficial for RBI to explore the policy success in untested areas, where these firms are going to operate, especially rural areas.

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 the country has approximately 5000 tonnes of gold with the 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).

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.

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?

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. BMD 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

5 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.

5.1 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.

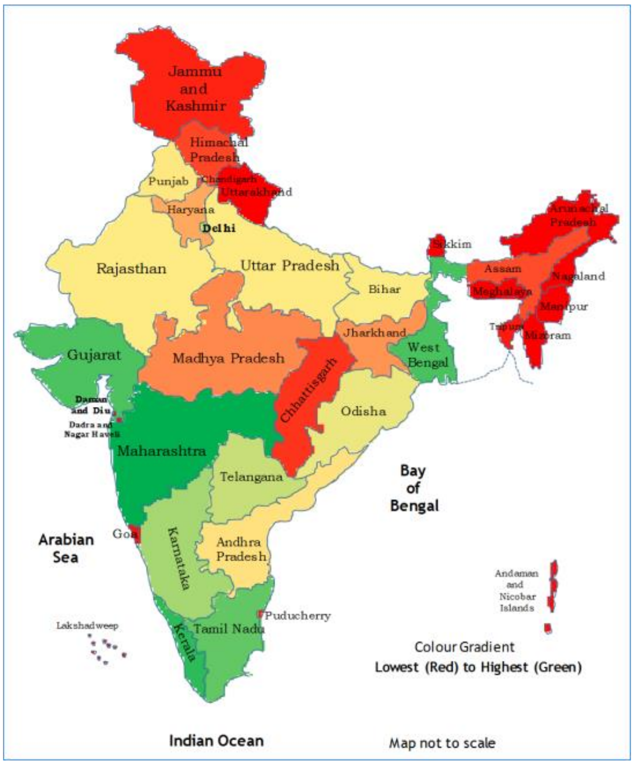
5.1.1 Sampling plan

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. Proxy used to arrive at the heat map is the number of gold jewellery licenses by state. (Please refer to appendix1 for more details on the distribution of gold jewellery licenses by state.) 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 Maharashtra Kerala Tamil Nadu West Bengal	Delhi Karnataka Telangana	Punjab Rajasthan Bihar Orissa Andhra Pradesh Uttar Pradesh	Haryana Madhya Pradesh Jharkhand

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

5.1.2 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 (refer to appendix 3) to guide their team members within each state. Questionnaire was prepared in English and interviewers used 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.

5.2 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 (refer appendix 4 & 5) was arrived at using preliminary interviews with bankers and secondary research on the policy parameters. Refer to appendix 6 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).

5.3 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 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.

5.3.1 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 2.Number of daughters in the household 3.Ratio of number of females to number of males in the household 4.District level sex ratio	National Census 2011 NSS

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.

5.3.2 Supply side consumption estimate

The dependent variable for this OLS multivariate specification is the number of licensed jewelers operating in the state as of 2012 per million population. 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 crores	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 Data and analysis

6.1 Consumption characteristics

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

States	Urban SEC								
	A1			A2			A3		
	Age in years			Age in years			Age in years		
	25-34	35-49	>=50	25-34	35-49	>=50	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			R2		
	Age in years			Age in years		
	25-34	35-49	>=50	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.

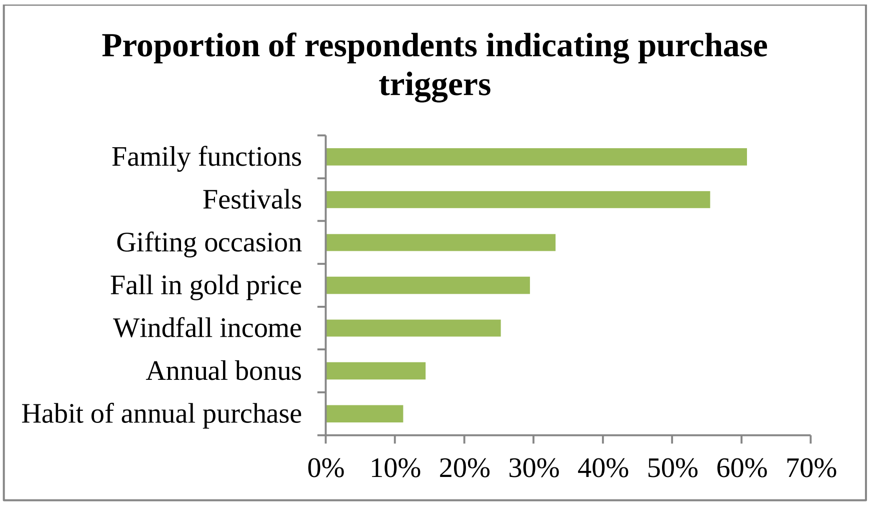
6.1.1 Findings and implications

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

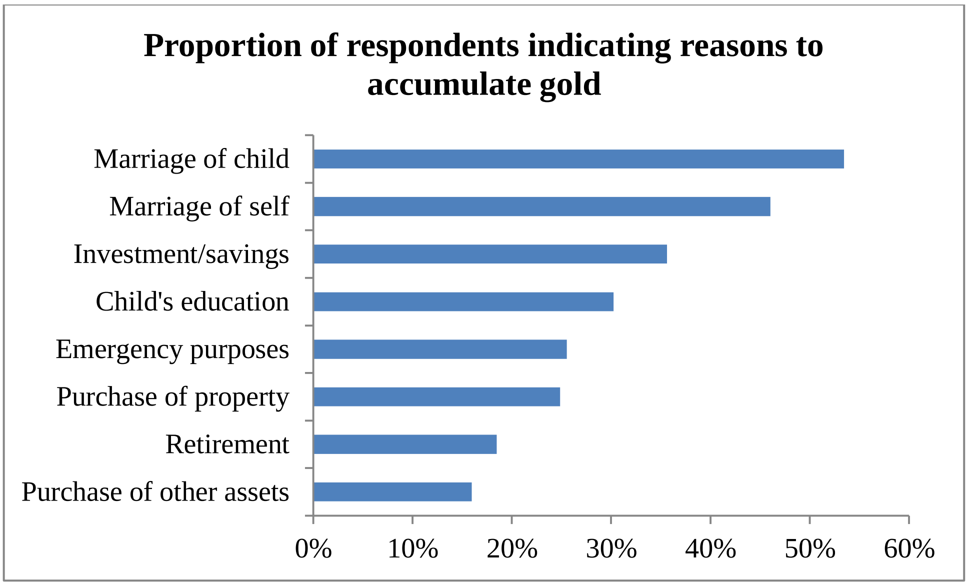
On average respondents indicated a high tendency to associate gold with purity and other aspects such as luck and good health. They also have a high propensity to purchase gold during family functions and festivals, supporting hypothesis 1a and 2d. Their associations with gold lead to low willingness to sell gold received as gift which supports hypothesis 2a. However they are willing to exchange the gold which 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, supporting hypothesis 2h. 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 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 and 2g, 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 supports hypothesis 2f.

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.

6.1.2 Target consumer characteristics

This section discusses potential target segments for gold monetization based on the survey results. Using a metric calculated by multiplying annual income (proxy for assets), proportion of gold in assets, and comfort with holding one's gold in paper form, the following demographic groups show the highest potential as target segments for GMS:

- Income: Rs.10 lakhs - Rs.20 lakhs per annum
- Age: 45 - 65 years

For this group, the main triggers for purchase of gold are gifting occasions and windfall income. This group purchases small quantities of gold to accumulate, for purposes such as child's education and investment in property. This implies that solid gold might not be the main draw for this segment and that gold is only a means of investment.

The above findings, along with sizing of the segment can be used to determine the suitability of the segment for targeting.

Cluster analysis

A cluster analysis of consumer responses according to variables relevant for potential gold monetization targets leads to the following clusters for rural and urban consumers respectively.

	Cluster - Urban				
	1	2	3	4	5
Comfort level in holding gold as paper asset	4.06	2.47	2.78	3.82	2.59
Annual Income level	3.51	2.18	1.76	2.09	5.41
Proportion of gold in total assets	2.70	3.22	1.24	1.86	2.24
Believes that there is no substitute for gold as an asset class	2.87	3.66	2.42	4.00	2.24
Number of respondents	112	104	218	215	17

	Cluster - Rural				
	1	2	3	4	5
Comfort level in holding gold as paper asset	3.93	3.53	2.88	3.29	3.03
Annual Income level	1.97	1.78	2.34	4.39	1.52
Proportion of gold in total assets	2.32	1.41	2.94	2.54	1.06
Believes that there is no substitute for gold as an asset class	4.09	1.75	2.75	2.83	3.65
Number of respondents	97	88	68	41	125

Based on size and medium-to-high scores for various parameters, in the urban segment cluster 1 is ideal for targeting and this accounts for 16.8% of the respondents. In the rural segment clusters 3 and 4 are suitable for targeting, accounting for 26% of the respondents. Such analysis can be used to determine consumer clusters for appropriate targeting.

6.1.3 Target geographies

This section discusses the potential target geographies based on the survey results. A state wise analysis of parameters indicating propensity to consider gold as investment rather than sentiment shows the scores and ranking as indicated below.

Parameters/State - Overall	Bihar	Delhi	Gujarat	Karnataka	Kerala	Maharashtra	Punjab	Tamil Nadu	Telengana	West Bengal
No substitute to gold - reciprocal score taken	0.41	0.32	0.27	0.33	0.31	0.42	0.32	0.30	0.30	0.26
Comfortable holding paper asset	3.27	3.59	3.47	4.09	3.05	3.08	2.44	3.26	3.89	3.35
Proportion of assets in gold	1.42	1.61	2.17	1.89	1.52	2.29	1.25	2.65	2.13	1.88
Consider gold as investment	0.14	0.45	0.8	0.49	0.77	0.57	0.125	0.86	0.46	0.84
Accumulation of gold for Investment	0.1	0.1	0.22	0.33	0.19	0.15	0.06	0.08	0.37	0.36
Gift gold given it is good investment	0.19	0.06	0.04	0.09	0.12	0.02	0.01	0.07	0.05	0.11
Values ancenstral jewellery given financial security	0.07	0.17	0.06	0.22	0.22	0.17	0.03	0.39	0.13	0.29
Open to pledging gold	3.41	3.06	2.87	4.04	3.31	3.11	3.51	3.27	3.56	3.29
Valid N	81	86	171	76	170	150	88	188	84	76
Total score	9.01	9.36	9.90	11.48	9.49	9.81	7.74	10.88	10.89	10.38

	Ranking		
	Rural	Urban	Overall
Bihar	4	9	9
Delhi	7	8	8
Gujarat	6	5	5
Karnataka	1	1	1
Kerala	9	7	7
Maharashtra	8	6	6
Punjab	10	10	10
Tamil Nadu	3	3	3
Telengana	2	2	2
West Bengal	5	4	4

- The state level scores have been arrived using those variables which indicate higher propensity to treat gold as investment rather than sentiment
- Rankings are largely consistent across both rural and urban segments
- Based on the scores, it will be better to test or deepen the GMS in the states of Karnataka, Telengana and Tamil Nadu

6.2 Interview based study

6.2.1 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

Current process for banks

- Customer approaches banks through GMS in short term deposit (1 to 3 years)
- Bank pays the deposit rate which is approximately 0.5% to 0.75% today on STD
- Bank has the metal on its books and it tries to lend it out
- Gold Metal Loan tenor is 6 months and the Gold deposit is for 3 years, leading to a maturity mismatch

For instance, *"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. 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.

Proposed process by banks

- Customer deposits with banks through GMS in short term deposit
- Bank pays the deposit rate on STD
- Bank sells the gold outright in the market and converts to rupees

One of the suggestions to hedge the risk was, *"bank goes long in a XAU/USD*[4] *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 and 2a, and reject 1f. Banks would promote GMS-based products if there is more control and clear separation or mitigation of risks relating to the operations of CPTCs. This finding rejects hypothesis 1d.

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

[4] 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.

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 doesn't support 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 supports hypothesis 1b.

There is a preference to start the scheme in urban areas due to the presence of CPTCs and refiners, and expand to rural areas only when the business is viable. Typically a CPTC operation requires about Rs.3 crores, so that gives an idea of the gold that can be safely given to the CPTC for handling. In any case, banks have to be willing to take significant risk. Banks typically have tie-ups with refiners, and this network of tie-ups determines the extent of logistical expenses incurred in transporting and handling the deposited gold. For instance, Kotak has tie-up with two refiners, but this covers only a limited region, and gold collected in other areas is sent to these refiners. Since transportation cost is extremely high (minimum Rs.10,000 if the item sent is gold), hence volume is essential for the business to be viable.

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.

6.2.2 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."* A leading refiner such as MMTC-PAMP has tie-ups with all (major) banks for refining. Banks choose which kind of refiners they would like to tie-up with (LBMA-approved, BIS-approved, other refiners, etc.) It might be beneficial to the success of the scheme if banks take up the step of initial certification, i.e., like an in-house (owned) CPTC or on-premise (third party) CPTC. 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. Another issue is that bankers have very limited knowledge of the gold industry, since it requires process specialization. This seems to support hypothesis 1e.

Refiners have the understanding that *"consumers' gold is of two types, gold for investment and "emotional" gold. Emotional gold is only a maximum of 30% of the total gold stock. The remainder is available for monetization. Hence, how GMS is communicated is important: at the end of the deposit term, consumer gets back gold, or if they prefer, they can get money"* (rather than saying the same point the other way round).

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.

Banks and refiners are forming tie-ups in order to have common refining activity. For refiners, public sector banks are more preferred due to their large networks and higher public trust in these banks. Once GMS picks up, refiners will increase their standards and we will see more refiners in the BIS-approved list. 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.

Refiners believe that *"GMS will reduce the dependence on import but might not be effective in controlling the use of gold to store black money. When it comes to standards of purity, jewellers are able to take old gold (jewellery) and give new because firstly, they are ok with the small loss of margin, and secondly, overall they do not stand to lose much in each transaction. Hence refiners of high standard are not important for the system, unless specified. But, increasingly the situation is changing due to environmental hazards of poor quality refining."*

Some refiners also believe that design of GMS is "flawed" because of significant risk to refiners, as described below:

- Consumer goes to the bank and then to CPTC in order to get an idea of the purity and quantity of gold. Suppose the CPTC gives a certificate of 80% purity. If the refiner then finds that purity is only 79%, what option does the refiner have?
- Refiner can either give 80% to customer or initially itself not take such a customer. Thus, refiner will risk making a loss of 1% on accepting the business.
- Once refiner finds the purity level, they can either bear that loss or get into dispute resolution.

- This is especially a problem for small quantities of gold.

Refiners suggest two main risk mitigation options for the above problems, as detailed below:
Risk mitigation option 1

- Refiners can set up their own collection centres, which will cost about Rs.1 crore
- The caveat here is the necessary RoI
- Hence, the refiner will get into this if refiner gets exclusivity of collection with some bank

Risk mitigation option 2

- CPTCs can issue a conditional purity certificate, which is conditioned on what the refiner finds
- This has been proposed by refiners but government is not agreeing to this
- This is important because the process followed by refiners is completely different from that of jewellers. Refiners point out that the cost of the refining process is not insignificant.
- Total cost of refining 1kg gold comes to about Rs.8000
- LBMA-approved refiners such as MMTC-PAMP typically charge about twice this amount
- Most refiners have low capacity utilization (in the range of 20-30%) due to lack of any tie-up with mining companies for continuous supply of dore
- Overall there are about 32 refiners with total capacity of ~1500 tons per annum
- 15-20 of the refiners are in Rudrapur, Uttarakhand, which is a tax haven, with sunset clause as of March 31, 2020. Between domestic tariff area (DTA) and tax free zone (TFZ), there was initially a tax advantage of 2%, which is now 1.25%

In the current GMS system, refiners need to take risk. Hence, it encourages refiners who are unethical in their operations (80% of refiners today operate in unethical manner, in terms of sourcing gold from dubious players, etc.). As a refiner suggested, *"One method to reduce the problems that refiners face could be to provide them equity capital (so that they can take on more inventory at a time) through SME Exchange, although this might need approval from LBMA or BIS."*

6.2.3 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 bank 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.

6.3 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].

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

[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.

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.

VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3	(4) 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).

6.1.4 Summary of hypotheses

Consumers

No.	Hypothesis	Supported/not
1a	Consumers have deeply entrenched mindsets and habits, which along with triggers lead to their gold consumption and purchase behaviour	S
1b	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	S
2a	Consumer attach a lot of symbolic value to gold which leads to very low willingness to part with gold	S
2b	Consumers are willing to exchange jewellery for other gold jewellery but not sell the gold jewellery for other purposes	S
2c	Gold is seen as a safe and liquid asset which doesn’t have any substitute	S
2d	Family upbringing where gold is valued in every social occasion in one’s life	S
2e	Lure for possessing the metal compared to a piece of paper which is backed by the asset	S
2f	People prefer pledging gold to selling gold to meet their needs	S
2g	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	S
2h	Rural consumers tend to value gold as more of investment rather than sentiment, unlike their urban counterparts.	NS
3a	One way to change habits is to use context changes such as marriage and child birth to trigger new thinking with respect to gold	S
3b	Another way to change habits is to use context changes such as shift to a nuclear family (to a new city) to deemphasize the use of gold as an investment	S

3c	The entire jewellery consumption and investment decisions are primarily made by the female partner	NS

Bankers

No.	Hypothesis	Supported/not
1a	Allowing gold as a part of CRR is one of the effective ways to incentivize bankers to mobilize gold	NS
1b	Statutes akin to priority sector lending is an effective way to mobilize gold	S
1c	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.	NS
1d	Current incentives are sufficient to lure Bankers to go after consumers to mobilize gold because it covers the entire cost of acquisition	NS
1e	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.	S
1f	Bankers are satisfied with the network of CPTCs/Refiners in the logistics of gold mobilization	S
2a	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	S
2b	Integration of quality assurance with Bankers would help in increasing the efficiency of the process	S
2c	Consumer education using technology would help in getting the new generation consumers interested (apps, trolls, youtube videos)	S
2d	Consumers are not convinced of the merits of the scheme due to the lack of training and interest of the Banking staff	NS
2e	Prior failures of monetization policies have led to a biased mind set in banks to not go after potential customers	S
2f	Bankers are able to meet the turnaround times that the consumers expect	S
2g	Gold monetization helps the Jewellers in reducing transaction(currency hedging, import duty etc.) costs	S
2h	Refiners can use their existing infrastructure, capital and a Business	S

	strategy to increase their reach to improve the quality assurance process time and thereby improving their Business.	
2i	Upgradation from fire assay method to PGM class detection method is a significant investment for the CPTCs	S
2j	Investment for banks in the quality assurance devices is prohibitive	S

7. Conclusions

The 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:

7.1 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.

7.2 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.

7.3 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.

7.4 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.

8. Implications

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. 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.

Very importantly, 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.

Thus, integrating the interests of various stakeholders and attending to consumer groups with diverse attitudes and behaviour form the two main dimensions to implementing the GMS effectively and efficiently.

References

Aarts, H., & Dijksterhuis, a. (2000). Habits as knowledge structures: automaticity in goal-directed behavior. *Journal of Personality and Social Psychology*, *78*(1), 53–63. http://doi.org/10.1037/0022-3514.78.1.53

Azam, M., & Kingdon, G. G. (2013). Are Girls the Fairer Sex in India? Revisiting Intra-Household Allocation of Education Expenditure. *World Development*, *42*(1), 143–164. http://doi.org/10.1016/j.worlddev.2012.09.003

Badarinza, C., Balasubramaniam, V., & Ramadorai, T. (2016). *The Indian Household Savings Landscape* (Vol. 44).

Balaji, K., & Maheswari, R. (2014). A Paradigm Shift in the Buying Behavior of Indians Towards Gold Jewellery – A Theoritical Approach with Reference to the Growth of Branded Retailers. *Indian Journal of Applied Research*, *4*(2), 11–13.

Basel Committee On Banking Supervision. (2011). *December 2010 (rev June 2011). Basel Committee on Banking Supervision Basel* (Vol. 2010).

Bhayani, R. (2016, November). Gold bonds worth 14 tonnes sold in six tranches: Govt. *Business Standard*, 4.

Chatterjee, S. (2013). Simple rules for designing business models. *California Management Review*, *55*(2), 97–124. http://doi.org/10.1525/cmr.2013.55.2.97

Council, W. G. (2016a). How much gold has been mined? Retrieved January 28, 2017, from http://www.gold.org/gold-mining/what-gold-mining-companies-produce/how-much-gold-has-been-mined

Council, W. G. (2016b). World Gold Council Interactive Gold Market Charting. Retrieved December 28, 2016, from http://www.gold.org/supply-and-demand/interactive-gold-market-charting

Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research designs. *Handbook of Mixed Methods in Social and Behavioral Research*, 209–240.

D'Souza, E. (2015). Gold Monetisation Scheme for India. *Economic & Political Weekly*, *I*(12), 23–27.

Deaton, A. S., & Ruiz-castillo, J. (1989). The Influence of Household Composition on Household Expenditure Patterns : Theory and Spanish Evidence. *Journal of Political Economy*, *97*(1), 179–200.

Dempster, N. (2006). *The Role of Gold in India*.

Ernst & Young. (2015). *Unmasking India ' s NPA issues – can the banking sector overcome this* *phase ?*

Gawronski, B., & Bodenhausen, G. V. (2006). Associative and propositional processes in evaluation: an integrative review of implicit and explicit attitude change. *Psychological Bulletin*, *132*(5), 692–731. http://doi.org/10.1037/0033-2909.132.5.692

Kumar, R. (2011). Treatment of Valuables as Capital Formation in India : Some Issues and Perspectives. *RBI WORKING PAPER SERIES*, (July).

Leser, C. (1963). FORMS OF ENGEL FUNCTIONS. *Econometrica*, *31*(4), 694–703.

Lewbel, A. (2006). Engel curves. *The New Palgrave Dictionary of Economics*, 1–7.

Ministry of Finance, G. GOLD MONETIZATION SCHEME List of Refineries granted Licence (2016).

O'Connor, F. a., Lucey, B. M., Batten, J. a., & Baur, D. G. (2015). The financial economics of gold — A survey. *International Review of Financial Analysis*, *41*, 186–205. http://doi.org/10.1016/j.irfa.2015.07.005

PTI. (2016). RBI to study why Indians spend big to buy gold.

Rajagopal, K. (2015). "Streedhan" is woman's exclusive property: SC. Retrieved January 28, 2017, from http://www.thehindu.com/todays-paper/tp-national/streedhan-is-womans-exclusive-property-sc/article7906734.ece

RBI. Payment Banks, Pub. L. No. 2015–2016/437 (2015). India.

RBI. Small Banks, Pub. L. No. 2015–2016/693 (2015). India.

RBI. Gold Monetisation Scheme , 2015, Pub. L. No. RBI/2015-16/211 (2016). India.

Sahay, A., & Mukherjee, S. (2016). *Influence of reference prices on purchase intentions and hedonic valuation of gold in India*.

Singh, C., Sinha, A. K., Nadkarni, A., Kumar, A., Sardar, J. K., Jain, S., … Shukla, S. (2015). *Gold and India* (No. 482).

Sinharay, A. (2013). Estimation of Private Final Consumption Expenditure in India : Issues regarding Data Availability and Validation. *The Journal of Income and Wealth*, *35*(1).

Srinivasan, S. (2005). Daughters or dowries? The changing nature of dowry practices in south India. *World Development*, *33*(4), 593–615. http://doi.org/10.1016/j.worlddev.2004.12.003

Street, L., Hewitt, A., & Gopaul, K. (2015). Turkey : gold in action, 1–17.

Tsetsos, K., Chater, N., & Usher, M. (2015). Examining the mechanisms underlying contextual preference reversal: Comment on Trueblood, Brown, and Heathcote (2014). *Psychological Review*, *122*(4), 838–847. http://doi.org/10.1037/a0038953

Wood, W., & Rünger, D. (2016). Psychology of habit. *Annual Review of Psychology*, *67*, 289–314. http://doi.org/10.1146/annurev-psych-122414-033417

Working, H. (1943). Statistical Laws of Family Expenditure. *Journal of the American Statistical Association*, *38*(221), 43–56. http://doi.org/10.1080/01621459.1943.10501775

Zott, C., & Amit, R. (2007). Business Model Design and the Performance of Entrepreneurial Firms, (April 2016). http://doi.org/10.1287/orsc.1060.0232

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

Consumer questionnaire

Note: All questions are mandatory, and only one response is allowed unless mentioned otherwise.

Section 0: Participant Screening

1. Do you possess at least 20 grams of gold?
    a. Yes
    b. No

Section 1: Associations and attributions

1. I associate gold with the idea of purity.
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
2. I donate gold to a deity or to temples.
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
3. When faced with a difficult situation in life, I offer gold to religious institutions in return for favours received (sometimes colloquially known as sacrifice).
    a. Yes
    b. No

4. How often do you offer gold to a religious institution?
    a. Rarely
    b. Regularly
    c. Always
5. I have specific traditional items of jewellery that are associated with luck.(Traditional here refers to the intrinsic value besides adornment)
    a. Yes
    b. No
6. I have specific traditional items of jewellery that are associated with good fortune.

a. Yes
b. No

7. I have specific traditional items of jewellery that are associated with good health, or meant to keep ill-health at bay.
   a. Yes
   b. No
8. I have specific traditional items of jewellery that are associated with protection from the evil eye.
   a. Yes
   b. No
9. When do you wear the above items (mentioned in question 5 to 8)? *(multiple options allowed)*
   a. I do not take such item(s) of jewellery off at any point of time
   b. I use it as a regular wear
   c. I wear it on religious occasions
   d. I wear it on social occasions
   e. I wear it when I feel the need (such as when I am attempting some new task and need fortune's favour)
   f. Others, pls specify
10. I have gold jewellery passed on from my ancestors.
    a. Yes
    b. No
11. The value I attach to such jewellery comes from… *(multiple options allowed)*
    a. My respect and value for my forefathers
    b. My ability to pass on the gold to my children
    c. The financial security the gold offers, since I can pledge or sell the gold if needed
    d. The adornment value of the traditional jewellery
    e. Others, pls specify
12. Gold jewellery symbolises social relationships.
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
13. I have gifted gold (jewellery/coin/bar).
    a. Yes
    b. No
14. If yes, I gift gold (jewellery/coin/bar) because…*(multiple responses allowed)*

a. Gold carries strong symbolic value for me
b. Gold is the typical gift that I always give
c. Other gifts such a television might not last long but gold remains forever
d. I prefer to give something that has investment value but since I cannot give money, I give gold
e. As a means to showcase my social status
f. Others. Pls specify (eg. you would gift it to close relative or friends who you regard with high respect)

15. I do not sell the gold that I have received as a gift.
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
16. My inhibition to sell the gold that I have received as a gift arises from wanting to avoid friction in relationships.
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
17. I wear gold jewellery regularly to indicate my social status.
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
18. I wear gold jewellery during social occasions to indicate my social status.
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
19. The gold jewellery that I own is an indication of my social status.
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree

    d. Agree
    e. Strongly agree
20. I am open to wearing gold-plated jewellery (which looks like jewellery made entirely of gold).
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
21. Are you open to exchanging to your jewellery for new jewellery?
    a. Yes
    b. No
22. How many times in the past 3 years have you exchanged gold jewellery?
    a. Never
    b. Once or twice
    c. 3 to 5 times
    d. More than 5 times

Section 2: Investment and sentiment

1. There is no substitute for gold as an asset class
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
2. Do you consider gold in any form as an investment?
    a. Yes
    b. No
3. What proportion of your "assets" consists of gold?
    a. <25%
    b. 25 – 50%
    c. 50 – 75%
    d. > 75%

    Add a qualifier to the answer above on the knowledge level.
4. The answer to the previous question was based on the gold holding of
    a. Self

b. Self & Spouse

c. Entire household

d. Others, please specify

5. What proportion of your gold holding is in jewellery?

a. <25%

b. 25 – 50%

c. 50 – 75%

d. > 75%

Add a qualifier to the answer above on the knowledge level.

6. The answer to the previous question was based on the gold holding of

a. Self

b. Spouse

c. Self & Spouse

d. Entire household

e. Others, please specify

7. On a scale of 1-5, please indicate the safety of gold as an asset class compared to a 3 year fixed deposit. Safety refers to the certainty of value preservation of the asset class, regardless of inflation.

a. Very safe

b. Safe

c. Neither safe nor unsafe

d. Unsafe

e. Very unsafe

8. On a scale of 1-5, please indicate the liquidity of gold as an asset class compared to a 3 year fixed deposit.

a. Very liquid

b. Liquid

c. Neither liquid nor illiquid

d. Illiquid

e. Very illiquid

9. Do you buy gold in small quantities in order to accumulate?

a. Yes

b. No

10. If yes, what purpose(s) do you buy this gold for? (*multiple responses allowed)*

a. Marriage of self or relatives

b. Marriage of your children

c. Retirement

d. Child’s education
e. Buying property
f. Buying other assets
g. Investment/Savings
h. Financial Emergency
i. Others, pls specify (eg. financial exigencies)

11. What triggers your purchase of gold jewellery? (*multiple responses allowed)*
    a. Festivals
    b. Family functions
    c. Gifting occasions
    d. Unexpected income
    e. Fall in the price of gold
    f. Habit of annual purchase
    g. Annual bonus
    h. Others, please specify
12. Consider the two main categories of gold purchase: investment and sentiment. *Investment* refers to purchase of gold considering its long term value appreciation and keeping in mind its scope for future selling and/or pledging if needed. *Sentiment* refers to purchase of gold for its symbolic value, keeping in mind the emotional attachment to gold. Is there a difference between gold bought for sentimental needs and gold bought as an investment?
    a. Yes
    b. No
13. Which of the following qualifies as gold purchase done for sentiment? *(multiple responses allowed)*
    a. Jewellery
    b. Gold bars
    c. Coins from temple
    d. Coins from jewellery/bank
    e. Others, pls specify
14. Which of the following qualifies as gold purchase done for investment? (*multiple responses allowed)*
    a. Jewellery
    b. Gold bars
    c. Coins from temple (or engraved with deity images)
    d. Coins from jewellery/bank
    e. Others, pls specify

15. When you buy gold jewellery/coins for gifting, where do you consider its value along the investment-sentiment spectrum? (sentiment could be your own attachment to gold or your perception of the recipient's attachment to gold)
    a. Only sentiment
    b. Mostly sentiment and some investment
    c. Equal sentiment and investment
    d. Some sentiment and mostly investment
    e. Only investment
16. What proportion of your gold jewellery is kept in lockers?
    a. <25%
    b. 25 – 50%
    c. 50 – 75%
    d. > 75%
17. What proportion of your gold bullion is kept in lockers?
    a. <25%
    b. 25 – 50%
    c. 50 – 75%
    d. > 75%
18. Consider a government scheme whereby you deposit your gold with a bank and receive a document (bond) in lieu of the gold. After a lock-in period, you can choose to receive money equivalent to the gold price in rupees at that point of time or gold. You also receive some interest every year for the lock-in period. Then please indicate your agreement with the line: I am comfortable with the idea of possessing a piece of paper which is backed by the gold, as opposed to the metal itself – Have a showcard here (flow diagram to explain this)
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
19. I consider pledging gold to be a better option than selling gold
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
20. The scope for pledging in the future affects my decision to buy gold now.
    a. Strongly disagree

b. Disagree
c. Neither agree nor disagree
d. Agree
e. Strongly agree

Section 3: Purchase of gold jewellery

1. I believe that the purity of the gold is as stated by the jeweller.
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
2. I trust only jewellers who offer hallmarked jewellery (BIS 916).
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
3. I trust only a particular brand of jeweller.
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
4. I trust only jewellers based on long term relationship
    a. Strongly disagree
    b. Disagree
    c. Neither agree nor disagree
    d. Agree
    e. Strongly agree
5. I have changed my preferred jeweller in order to ensure that I buy only hallmarked jewellery.
    a. Yes
    b. No
6. I have changed my jeweller following jeweller advertisements of the importance of hallmarking.

   a. Yes
   b. No
7. The activities that the jewellers undertake include the following *(multiple options allowed)*
   a. Purchase of gold jewellery
   b. Exchange of new jewellery against old jewellery
   c. Purchase of bullion (gold bars, coins)
   d. Pledging of gold
   e. Purity testing
   f. Financing of future purchase of gold
8. Who makes the decision on purchase of gold for investment within your family? *[only one option allowed]*
   a. Myself
   b. My parents
   c. My spouse
   d. Jointly by myself and spouse
   e. Others, please specify
9. Who makes the decision on purchase of gold for adornment/sentiment within your family? *[only one option allowed]*
   a. Myself
   b. My parents
   c. My spouse
   d. Jointly by myself and spouse
   e. Others, please specify

Section 4: Product ideas

1. Are you interested in withdrawing gold coins or bars of small denominations as a form of currency?
   a. Strongly uninterested
   b. Uninterested
   c. Neither interested nor uninterested
   d. Interested
   e. Strongly interested
2. Banks will be able to assure the purity and security of gold that is dispensed from the ATM.
   a. Strongly disagree
   b. Disagree
   c. Neither agree nor disagree

    d. Agree
    e. Strongly agree
3. Consider that banks start selling gold plated medallions engraved with faces of your choice. These medallions are available in addition to the interest you earn when you invest in a gold monetization scheme or deposit your gold with the bank. Would you be interested in buying such a medallion in return for depositing your gold?
    a. Strongly uninterested
    b. Uninterested
    c. Neither interested nor uninterested
    d. Interested
    e. Strongly interested
4. If your company provided you the option to choose a portion of your annual bonus to invest in gold bonds as above, through a tie up with a trustworthy bank, would you be interested in the scheme? (question applicable to salaried respondents only)
    a. Strongly uninterested
    b. Uninterested
    c. Neither interested nor uninterested
    d. Interested
    e. Strongly interested

Section 5: GMS

1. Are you aware of the Gold Monetization Scheme (GMS)?
    a. Yes
    b. No
2. If **yes**, how many banks have approached you for discussing the merits of the scheme?
    a. >3
    b. 3
    c. 2
    d. 1
    e. 0
3. Several of my friends and/or relatives have invested in the GMS.
    a. Yes
    b. No
4. If you have the option to not declare the source of gold, would you be more likely to take up the GMS?
    a. Yes

b. No

Consider a scheme whereby you can deposit gold (jewellery or bullion) to earn a return on an annual basis as well as get the gold or equivalent monetary value of the gold at maturity. Assuming you are interested in such a scheme, please answer the following question:

5. How fast would you want the bank to process the gold deposit?
    a. Within 24 hours
    b. Within 3 days
    c. Within 5 days
    d. Within 10 days
    e. Within 15 days

Section 6: Demographic details (add the household details except for the income level)

1. What is your gender?
    a. Male
    b. Female
    c. Other
2. What is your age
    a. <25
    b. 25-34
    c. 35-49
    d. 50-60
    e. >60
3. What is your marital status?
    a. Never married
    b. Married
    c. Divorced
    d. Widowed
4. Please list the composition of your household

    [Member, age, gender, relationship]
5. Which village/town/city do you live in?

    ----
6. What is the name of the state you hail from?

    ----

7. What is the level of your education?
    a. Below graduate
    b. Graduate
    c. Post graduate
    d. Above post graduate
8. What is your occupation?
    a. Salaried
    b. Self Employed
    c. Not working
9. What is your income level per annum?
    a. < 3 lakh
    b. 3-5 lakhs
    c. 5-10 lakhs
    d. 10-15 lakhs
    e. 15-20 lakhs
    f. 20-30 lakhs
    g. 30-50 lakhs
    h. >50 lakhs
10. What is your SEC group? [derived variable]

Appendix 4

Bankers' questionnaire

Research Question	Hypothesis	Question	Comment/Analysis
What are the incentives or statutes necessary for a set of banks to take up Gold monetization scheme?	Allowing gold as a part of CRR is one of the effective ways to incentivize bankers to mobilize gold	Will allowing gold as part of CRR incentivizes banks to mobilize gold? a. Is the volatility of gold prices (which is linked to USD) a concern for banks and RBI? b. What is the incentive that gold as part of CRR offers?	Incentive: overnight borrowing cost to maintain CRR comes down
	Statutes akin to priority sector lending is an effective way to mobilize gold	Is statute an effective way to push banks to mobilize gold deposits? For instance, 10% of all new accounts opened in the branch in a month have to be initialized with a gold deposit. What challenges do you foresee if such a statute is mandated?	

	Offering differential incentives based on performance of GMS is an effective way to make this scheme a success	Will a proposition of GOI in consultation with RBI to offer premiums and discounts to CRR/SLR for banks that perform well in GMS incentivize the banks to go for gold? Performance in GMS linked covenants during capital infusion of the public sector banks by GOI will drive banks to go after potential clients more effectively?	This could be explored by ensuring that the systemic weighted CRR remains at the desired level, whereas at a Bank level, there could be a performance linked incentive.

	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	Do the legacy issues such as NPAs and staff issues (efficiency) of public sector banks make it tough for them to prioritize gold mobilization? a. Will the newly licensed banks be better equipped in terms of technology and cleaner balance sheet to prioritize this activity? Do you think there are any alternate entities which can be assigned this task, such as NBFCs?	Legacy bankers might feel that they have too many issues on their plate and hence the primary responsibility of gold mobilization should be assigned to the banks that have been given new licenses.

	The head of the division handling gold monetization does not receive all the support necessary to ensure that the process is effective and efficient	There is support from the top management/board to commit more time and resources to GMS within the bank? IT infrastructure is put in place, back office support is adequately trained and procedures have been laid to handle processes regarding GMS? Status and updates regarding GMS is discussed within the bank top management daily/weekly/fortnightly? Do you believe the policy is attractive to the customer and does the top management also have the same belief? Do you think the network that is assigned to mobilize the deposits (branches/zones etc.) for GMS within your bank is adequate and helps in effectively mobilizing the gold? Is there a dedicated team/manager handling GMS within your bank or is it one of the portfolio of products that is under the responsibility of a team/manager? Do you believe the team handling	

		GMS is motivated enough to deliver the targets? If yes, in what ways are they motivated? What is the quality assurance process put in place to ensure that the employees are aware of the GMS?	

	Current incentives are not sufficient to lure bankers to go after consumers to mobilize gold	Compared to the incentives linked to other products, how does the 2.5% commission fare? How much is the total cost of acquiring a gold deposit customer? What are the components of that cost?	
	Bankers are not satisfied with the network of CPTCs/Refiners in the logistics of gold mobilization	What is your experience (or that of your colleagues) in mobilizing a gold deposit in terms of process? Is the network of quality testing and assurance agents a roadblock (disincentive) for banks to mobilize gold?	
What are some suitable BMDs for banks as hubs, which includes other stakeholders who are part of the process of gold	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	Can the current process that the customer has to follow be called "customer-friendly"? a. Which are the aspects of the process that are most tedious for the customer?	

mobilization?	Integration of quality assurance with bankers would help in increasing the efficiency of the process	Will bringing CPTCs under the bank's purview and/or setting up testing centres close to the bank premises improve the customer experience? a. Consequently, will this incentivize banks to provide the gold monetization service in a better way?	Better service: smaller TAT, priority service, fewer touchpoints
	Consumer education using technology would help in getting the new generation consumers interested (apps, trolls, youtube videos)	Will the use of technology for consumer education help in getting the new generation consumers interested in the gold monetization scheme? a. Do you think the new generation customers will be happy with the current process? What could be the sources of their dissatisfaction?	

	Consumers are not convinced of the merits of the scheme due to the lack of training of the banking staff	Do you (or your colleagues) have any experience of customers being unhappy about the service although arriving with a willingness to deposit and hence deciding not to deposit? Are the banking staff informed and trained with regard to the policy, at all levels?	
	Prior failures of monetization policies have led to a biased mind set to not go after potential customers	In your experience (or that of colleagues), are there any examples of prior failures of monetization schemes? Have such failures led to a bias against the current gold monetization policy? How does the current policy fare against the prior policies?	E.g. SBT gold mobilization in 2011? [read] The question would be not asked explicitly but by asking the concerned officer to ask learning from prior policies and its success rate Bankers might view the current

			scheme as "old wine in new bottle"
	Bankers are able to meet the turnaround times that the consumers expect	What is typical consumer expectation of TAT? By how much do the banks exceed this TAT, typically?	
	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.	If refiners improve their infrastructure, capital and business strategy, would it improve their business significantly? a. Will this contribute to an increase in business to the banks?	

	Upgradation from fire assay method to PGM class detection method is a significant investment for the CPTCs	Is the upgradation from fire assay method to PGM class detection method a significant investment for the CPTCs?	Might need to ask this to CPTC directly
	Investment for banks in the quality assurance devices is prohibitive	Have you considered investing in fire assay equipment or XRF machines in the bank?	

Product ideas: Ways to mobilize gold from consumers	Banks could start opening accounts with rural customers using gold deposits rather than cash deposits and thereby improving the inclusion of that sector. Central Database of lockers maintained in banks to be proposed. Bidding for database to take place amongst Small Banks/Payment Banks and the proceeds to be given to the source Bank/NBFC with a small percentage to be given to the GOI.	Will promoting account opening in the rural areas through gold deposit be feasible? Do banks actively use their locker database to source customers for various offers? Have you tried this for gold monetization? Is it feasible to share the database with a central party such as RBI for onward sharing with bidders through an auction?	E.g. 5% of all new accounts opened by the Regional Rural Banks must be through the gold deposit scheme. 10% of all new accounts opened by the payment banks and new small banks must be through the gold deposit scheme. Explain the idea of gold ATM if needed There could be certain parts of the country, where gold is the unofficial currency of exchange.

Product ideas: Ways to reduce the consumption of gold	Banks tying up with corporates to give options during the bonus season to directly invest in SGB instead of taking bonus in the form of cash is an attractive proposition for SGB.	Do you think a tie up with corporates to give options during the bonus season to directly invest in SGB instead of taking bonus in the form of cash will be successful?	

Appendix 5

Refiners' questionnaire

Jeweller/Refiners Qualitative Interviews

Research Question	Hypothesis	Question	Comment/Analysis
What are some suitable BMDs for banks as hubs, which includes other stakeholders who are part of the process of gold mobilization?	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	Can the current process that the customer has to follow be called "customer-friendly"? a. Which are the aspects of the process that are most tedious for the customer?	
	Integration of quality assurance with bankers would help in increasing the efficiency of the process	Will bringing CPTCs under the bank's purview and/or setting up testing centres close to the bank premises improve the customer experience? a. Consequently, will this incentivize banks to provide the gold monetization service in a better way?	Better service: smaller TAT, priority service, fewer touchpoints
	Consumer education using technology would help in getting the new generation consumers interested (apps, trolls, youtube videos)	Will the use of technology for consumer education help in getting the new generation consumers interested in the gold monetization scheme? a. Do you think the new generation customers will be happy with the current process? What could be the sources of their dissatisfaction?	
	Consumers are not	Do you (or your colleagues) have	

	convinced of the merits of the scheme due to the lack of training of the banking staff	any experience of customers being unhappy about the service although arriving with a willingness to deposit and hence deciding not to deposit? Are the banking staff informed and trained with regard to the policy, at all levels?	
	Prior failures of monetization policies have led to a biased mind set to not go after potential customers	In your experience (or that of colleagues), are there any examples of prior failures of monetization schemes? Have such failures led to a bias against the current gold monetization policy? How does the current policy fare against the prior policies?	E.g. SBT gold mobilization in 2011? [read] The question would be not asked explicitly but by asking the concerned officer to ask learning from prior policies and its success rate Bankers might view the current scheme as “old wine in new bottle”
	Bankers are able to meet the turnaround times that the consumers expect	What is typical consumer expectation of TAT? By how much do the banks exceed this TAT, typically?	
	Refiners can use their existing infrastructure, capital and a business strategy to increase their reach to improve the quality assurance process	If refiners improve their infrastructure, capital and business strategy, would it improve their business significantly? a. Will this contribute to an increase in business to the banks?	

	time and thereby improving their business.		
	Upgradation from fire assay method to PGM class detection method is a significant investment for the CPTCs	Is the upgradation from fire assay method to PGM class detection method a significant investment for the CPTCs?	Might need to ask this to CPTC directly
	Investment for banks in the quality assurance devices is prohibitive	Have you considered investing in fire assay equipment or XRF machines in the bank?	
Product ideas: Ways to mobilize gold from consumers	Banks could start opening accounts with rural customers using gold deposits rather than cash deposits and thereby improving the inclusion of that sector. Gold ATMs to facilitate withdrawal of gold in certain rural/urban hubs is a possibility that	Will promoting account opening in the rural areas through gold deposit be feasible? Will gold ATMs to facilitate withdrawal of gold in rural hubs be feasible legally, logistically and financially ?	E.g. 5% of all new accounts opened by the Regional Rural Banks must be through the gold deposit scheme. 10% of all new accounts opened by the payment banks and new small banks must be through the gold deposit scheme. Explain the idea of gold ATM if needed There could be certain parts of the country, where gold is the unofficial currency of exchange.

	can attract consumers to this scheme. Central Database of lockers maintained in banks to be proposed. Bidding for database to take place amongst Small Banks/Payment Banks and the proceeds to be given to the source Bank/NBFC with a small percentage to be given to the GOI.	Do banks actively use their locker database to source customers for various offers? Have you tried this for gold monetization? Is it feasible to share the database with a central party such as RBI for onward sharing with bidders through an auction?	
Product ideas: Ways to reduce the consumption of gold	Banks can attract youth and new income earners during the festive season Banks running campaigns during the festive season to attract customer to buy SGB linked bullion scheme rather than actual bullion is a good	Do you run any campaigns for mobilizing gold at some specific location or during any occasion? Do you think a campaign to attract customer to buy SGB linked bullion scheme rather than actual bullion will be successful?	

	way to lure customers. Banks tying up with corporates to give options during the bonus season to directly invest in SGB instead of taking bonus in the form of cash is an attractive proposition for SGB.	Do you think a tie up with corporates to give options during the bonus season to directly invest in SGB instead of taking bonus in the form of cash will be successful?	

Appendix 6

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