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COVID-19 AND ECONOMIC STIMULUS PACKAGES: LESSONS FROM INDIAN HISTORY

ABSTRACT

To address the devastating effects of COVID-19 many governments announced economic stimulus packages. The challenge faced by policymakers is how to design stimulus measures to benefit the maximum number of people. The purpose of this paper is to examine whether some religious activities, such as performing *Yajñas* or *Yāgas* and the building of massive temples undertaken by the Indian kings in the past, suggest the critical factors for the successful implementation of economic relief measures. Our analysis of literary sources such as *Rāmāyaṇa* and *Mahābhārata* and inscriptions by Emperor Rajaraja I on the Brhadīśvara temple, suggests these crucial factors: political leadership and vision, appointing capable and incorruptible people as managers, rulers ready to spend money, arrangements for maintenance of long-term projects after their completion, and enlisting public support for the measures. Our interdisciplinary study (“The Economics of Religion”) extends the extant literature on religious activities by adding an economic perspective.

Key Words: COVID-19, Economic effects of COVID-19, Stimulus Packages, Economics of Religion, Sacrifices and Economic benefits, Temples and Economic Benefits

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INTRODUCTION

The COVID-19 pandemic resulted in varying degrees of lockdowns in many countries. Most of the economic activity came to a standstill. The International Monetary Fund (IMF) in its World Economic Outlook Report (June 2020) projected negative growth for all regions across the world, such a thing happening for the first time in history. The world economy is going into recession, with a projected growth rate of -4.9% in 2020 (IMF). The developed economies are projected to shrink by 8% and the developing economies by 3%.

Unemployment is climbing quickly. In April 2020, the US unemployment rate reached a record 14.7%. The International Labour Organization (ILO) gave a dire warning that nearly half of the global workforce may lose their jobs, according to ILO News, April 29, 2020. As of 9 April, the S&P 500 stock index is down more than 13% since the start of the year, while global oil prices have plummeted more than 47% year-to-date (Hutt, 2020).

The pandemic has a deleterious effect on both the business level and personal levels. Since factories were closed for prolonged periods of time, production came to a halt. Social distancing and restrictions on movement are expected to have a serious impact on the personal finances of people. Many companies are projected to go out of business resulting in prolonged periods of unemployment for millions of workers. Hence, it may take quite a long time for economies to bounce back. According to the United Nations Industrial Development Organization Report of July 10, 2020, firms across the world are facing two major challenges: the contraction in demand, and the payment of wages.

According to the Reserve Bank of India (RBI) Governor, "COVID19 is the worst health and economic crisis in the last 100 years with unprecedented negative consequences for output, jobs and well-being. It dented the existing world order, global value chains, labour and capital movements across the globe," (Business Standard, 2020). Economists are expecting deep and long recessions for all economies – developed and developing.

To address this unprecedent situation, many governments announced stimulus packages. These consist of short-term and long-term measures to boost the economies. Some of these measures are meant to provide immediate relief to people while some others are for reviving economies in the long run.

But policymakers and economists are facing a tough challenge as to how to design the economic packages. Some questions they are grappled with are: balancing the short-term and long-term needs, identifying the need, maximizing the number of people to be benefitted, the amount of money that the government can afford to spend, acceptance of these measures by the public, providing political leadership, executing the projects efficiently without problems like corruption, delays etc. Prasad (2020) summarizes the challenges thus: "Fiscal stimulus by governments, ... has proved to be politically complicated, cumbersome to implement, and often difficult to target where the need is greatest."

Though various studies examined the effectiveness of stimulus packages, the studies that distinguish economic stimulus packages into long-term and short-term are very limited in number. Similarly, research on religious activities such as performing *Yajñas* and the construction of massive temples examined various aspects related to them. The

research on *yajñas* is focused on the scientific aspects, environmental protection, pollution control or the therapeutic approach of *yajña*. Studies on Hindu temples mainly analysed the architectural marvel, positioning of the temples, *vastu* and related topics. However, there are no studies examining the economic perspective and purpose of those activities.

The purpose of our study is to examine how Indian rulers in the past provided economic relief in the short and long-term in times of economic need and if those experiences are useful in designing the stimulus packages by modern governments. Specifically, we examined two important religious activities of the past. The first one, kings used to perform *Yajña* or *Yaga* and donate huge sums of money and food to all classes of people. That is akin to direct relief in the short-term. Second, for the long-term economic boost, kings used to build huge temples to provide gainful employment to people of various skills.

A detailed analysis of these activities in our study revealed that those projects were very successful in providing relief to the public. The factors responsible for success are: imaginative leadership, efficient execution of the projects, the government not hesitating to spend money, foresight in providing funds for maintenance of long-term projects, and enthusiastic participation of the public. These are the lessons for modern governments to design economic stimulus packages to bolster their economies which are being shattered by the pandemic.

Our research extends the extant literature on religious activities, such as performing *Yajñas* and constructing temples, by adding an economic perspective to them. Indian rulers engaged in these activities for hundreds of years and spent enormous amounts of money. It is difficult to imagine that the kings could indulge in those projects unless there were significant economic benefits to the public. Our study provides an answer to that question. We believe that our paper may open a new area in interdisciplinary research “The Economics of Religion”, that is, examining religious events/activities from an economic perspective.

The rest of the paper is organized as follows. In the next section, the details of economic stimulus packages in various countries are provided. Section 3 reviews the literature on economic stimulus packages, religious activities such as *Yajñas* or *Yagas* and temple-building and identifies the gap in the literature. Section 4 describes the short- and medium-term relief measures undertaken by Daśaratha, Rāma and Yudhiṣṭhira in the form of *Yajña* or *Yaga*. Section 5 examines the long-term economic benefits of temples, with the specific example of the Bṛhadīśvara Temple by the Chola emperor Rajaraja I. In Section 6 we discuss some lessons to be learnt from these two activities of the past rulers. The last Section contains concluding remarks.

ECONOMIC STIMULUS PACKAGES BY MODERN GOVERNMENTS

Faced with an unprecedented crisis, many governments announced stimulus packages to shore up the economies. The stimulus packages as part of fiscal aids may be seen in two forms: 1) provisions that directly reach people to meet short-term needs, and 2) incentives for the industry and infrastructure development projects that would bring short-term as well as long-term benefits.

The first form of direct provision is imperative for immediate relief at the time of increasing lay-offs and heightening uncertainty in the economies. The second form of providing aid to industrial activity is also significant as it provides an immediate benefit in the form of employment as well as long-term benefits. Therefore, having the right proportion between the two forms of expenditure - the direct provision and the incentives for industrial activities - is very critical for economic revival. Let us examine the packages announced by a few countries:

United States of America

The government of the United States, the country worst hit by the pandemic, has allocated 659 billion USD, an amount equal to 2.3% of GDP towards the Pay-check Protection Program (U.S. Department of the Treasury, 2020), a scheme under which loans are sanctioned to provide direct incentives to small scale businesses for job retention and certain other expenses. An amount of 2.3 trillion USD, which is around 11% of GDP, was provided towards the Coronavirus Aid, Relief, and Economic Security (CARES) Act (U.S. Congress, 2020a) delivering support and protection to the American people from the health as well as economic impacts of COVID-19. For providing assistance on nutrition, paid sick leave, insurance coverage on unemployment, free coronavirus testing and medical aid funding, 192 billion USD is allocated towards Families First Coronavirus Response Act (U.S. Congress, 2020b). For vaccine development, healthcare, loan assistance for small business administration and other economic support, 8.3 billion USD was sanctioned towards Coronavirus Preparedness and Response Supplemental Appropriations Act.

Currently, US infrastructure is said to be way behind its global counterparts. Yet, there is no allocation of funds in the stimulus packages for infrastructure projects or long-term projects to boost the economy.

As of December 2020, due to the resurgent pandemic, the economic situation deteriorated. Hence, the US Congressional leaders are having deliberations to provide an economic relief package of nearly \$900 billion (The Washington Post, 2020). The package could include a one-time check of \$600 for millions of Americans below a certain income threshold, aid for ailing small businesses, and other critical needs, such as vaccine distribution and schools. The tortuous and contentious negotiations among lawmakers to reach a deal points out the difficulty in structuring the economic relief packages.

Japan

Japanese economy suffered its worst post-war contraction of 8.2% in the second quarter of 2020. To mitigate the economic fallout of the pandemic, the Government of Japan had announced an emergency economic package of 117.1 trillion JPY, which is equivalent to 21.1% of the GDP. Out of this package, 75% of the amount is segregated for employment and business support and 25% for healthcare, support to households, raising the COVID-19 reserve fund and public investment (KPMG Global, 2020a). The package includes a cash payment of ¥100,000 to every resident, irrespective of age, nationality, or income.

Over and above this the government had also come up with a stimulus package to support and provide benefits to Small and Medium Enterprises (SMEs). Although there are certain credit facilities made available for large businesses, Japan has mostly concentrated on revitalising SMEs by offering them interest-free loans without the need for collateral. As part of ‘Emergency Economic Measures’ to tackle COVID-19, Japan also came up with financial emergency support for households such as cash payments, child allowances, rent support etc., which can be categorised to the provisions that directly reach people to meet short-term needs. The aggregate size of the new fund provisioning measure and the special funds-supplying operation is around \$838 billion (International Monetary Fund, 2020a).

In December 2020, Japan announced another round of stimulus amounting to 73.6tr yen (\$708bn). The package includes extensions of subsidy programs for promoting domestic travel, spurring consumption, green investment, and digitalization (BBC, 2020). In the stimulus packages, Japan has earmarked some amount for supporting large companies, but no significant allocation of the amount is found for infrastructure development or long-term projects.

China

China, the country where this pandemic outbreak is believed to have originated, recorded a steep decline in GDP of 6.8% in the first quarter of 2020. In response, the Government has announced 4.2 trillion RMB, which is estimated to be 4.1% of GDP, for the prevention and control of the disease, medical equipment production, unemployment insurance and extension to migrant workers, public investment and so on. China has taken measures like facilitating credit to SMEs, particularly assisting local banks' uncollateralized SME loans; easing loan size restrictions; delaying loan payments; extending the deadline, and other credit assistance measures for eligible SMEs as well as for households; additional financial support for companies; additional public investment and so on. China also took policy measures to subsidise R&D costs for SMEs and also announced packages specifically to support digitalisation of SMEs, which can be considered as those having long-term effects (KPMG Global, 2020b).

In this pandemic crisis, China is planning to spend 2.8 trillion RMB to spur the infrastructure investment in local government special bonds (Reuters, 2020). China now gives due consideration to medical infrastructure development. In a recent study published by Asian Infrastructure Investment bank in June 2020, the performance of Chinese infrastructure companies is better compared to that in other countries like Japan, India, Korea, Turkey and Indonesia (Pandey, Kizilca, and Kong, 2020).

A unique feature of China is that unlike other major world economies (for example, USA and Japan), the stimulus packages do not provide direct financial support for individuals (Xiaochen, 2021). Their focus is on funding private businesses and government investment.

India

India's fiscal support in the form of direct spending and forgoing or deferring of revenue is 1.9 % of GDP. The direct-spending measures are categorised mainly for food, cooking

gas, the release of essential items and testing kits, wage support to low-wage workers, insurance coverage for healthcare workers as well as direct cash transfer to low-income households. Another 1.9 % of GDP is segregated for measures that provide credit support to businesses, 1.6% of GDP specifically for farmers, migrant and poor households, 0.4 % of GDP for electricity distribution, 0.7 % of GDP to support the agricultural sector and 0.3 % for other miscellaneous support measures. That means a total of 4.9% of GDP forms part of non-direct spending packages. The support package for business includes various financial sector measures for Micro, Small, and Medium Enterprises (MSMEs) and Non-Banking Financial Corporations (NBFCs) (International Monetary Fund, 2020b). Since India is an agri-based economy, the government has given due importance to the agricultural sector as well. The agricultural sector support is primarily meant for infrastructure development. For the farmers Agri Infrastructure Fund, an amount of 1 lakh crore INR (Indian Rupees) has been allocated. In addition to the above amount 15,000 crore INR, which is about 0.1 percent of GDP, is said to be deployed for health infrastructure.

The government of India has launched an ‘Atmanirbhar Bharat’ scheme, with an aim to make India a self-reliant country in various sectors during and post COVID, and allocated 20 lakh crore INR, which is around 10% of GDP. When compared as a percentage of GDP, India ranks top pushing behind other developed countries - Japan, the US, Sweden, Australia, and Germany (The Hindu, 2020), wherein infrastructure is given due importance among five pillars; Economy, System, Vibrant Demography and Demand being the other four. The scheme is an exhaustive one having five phases (Government of India, 2020):

- Phase-I: Businesses including MSMEs
- Phase-II: Poor, including migrants and farmers
- Phase-III: Agriculture
- Phase-IV: New Horizons of Growth
- Phase-V: Government Reforms and Enablers

Phases one, two and a segment of phases three and five are mostly towards direct-spending fiscal aid. Phases four and five are devoted to a holistic vision of improving the infrastructure base in various sectors including agricultural infrastructure in the third phase. With the announcement of such an enormous stimulus package clubbed with ‘Atmanirbhar Bharat’, the macroeconomic variables have started picking up.

To summarize, the USA and Japan have focussed on short-term relief measures while China and India aimed at both short- and long-term programs. All four countries are generous in their packages, spending a significant percentage of their GDP. It seems that India’s stimulus package is attempting to balance various interests: direct and non-direct spending, agriculture and industry, small and big business, short- and long-term.

It is evident from the above discussion that various governments are seriously thinking about how to design stimulus packages to shore up economies in the face of an unprecedented crisis. In addition to immediate relief measures, economic revival beyond

COVID-19 requires the widespread creation of sustainable jobs (Das, 2020). Some questions the governments are struggling with are: balancing the short-term and long-term needs, maximizing the number of people to be benefitted, the amount of money that the government can afford to spend, acceptance of these measures by the public, executing the projects efficiently without problems like corruption, delays etc. The challenge of providing suitable relief measures is described as “Fiscal stimulus by governments, ... has proved to be politically complicated, cumbersome to implement, and often difficult to target where the need is greatest” (Prasad, 2020). Jianguang (2020) opines that the stimulus package, by itself, is not a panacea to overcoming the economic crisis. A well-structured and carefully targeted spending plan serving both short-term stability and long-term prosperity is needed.

LITERATURE REVIEW

Several studies examined the effectiveness of economic stimulus packages. For example, Ahmad et al. (2020) considered Malaysian SMEs and proposed a model that is pertinent to evaluating the efficacy of the additional economic stimulus package in easing the financial burden for SMEs. Allam (2020) outlined the necessity for short-term fiscal emergency response measures for the economy while maintaining long-term sustainability requirements. The study stressed the fact that the short-term economic stimulus packages can pose long-term challenges if not crafted properly.

Nhamo, Dube, and Chikodzi (2020) investigated the economic stimulus packages for the tourism sector and found that the measures included postponement of loan payments, tourism surcharges, taxes, facilitating special tourism sector loans etc., and the most popular one being the income tax deferrals. Narayan, Phan, and Liu (2021) examined the effect of economic stimulus packages of G7 countries on the stock returns and found that the stock returns responded positively to the packages. Siddik (2020) performed a cross-country analysis and found the age of the population, the number of hospitals, the number of beds per capita, the total number of COVID-19 cases, the GDP, healthcare spending, and the index of the severity of the government reaction as the determinants of economic stimulus packages.

Though various studies scrutinized the efficacy of economic stimulus packages, the studies that distinguish those packages into long-term and short-term are very limited in number.

A number of studies examined various aspects of religious activities such as performing *yajñas* and the construction of Hindu temples. The research on *yajñas* is focused on the scientific aspects, environmental protection, pollution control or the therapeutic approach of *yajna*.

Acharya (2001) in his book ‘The Integrated Science of Yagna deals with topics like Scientific Aspects of Yagna, fumigating Substances Used in Yagna, inverted Pyramid Shaped *Agni Kunda*, chanting of Sanskrit Mantras, purification of Environment by Yagna, removal of Foul Odours, removal of Bacteria and insects, and effects on Plants and Vegetation. Rastogi et al. (2022), in their paper deal with the importance of Vedic science in reducing Air Quality Index (AQI) level and betterment of life with the use of Indian Vedic rituals *Yajna* and *Havan*. Panwar, Singh, and Kulshrestha (2021) advocate for the

establishment of *Yagya* Therapy as an important therapeutic approach for controlling the pandemic conditions like Covid-19. Singh and Singh (2018) do a comparative study of antimicrobial activity of smoke extract of Yagya and non-Yagya.

Studies on Hindu temples mainly focus on the architectural marvel, positioning of the temples, *vastu* and related topics.

Vardia (2008) in her thesis deals with the construction of the sacred Hindu temples, the science and the processes involved in the construction along with the skill it took to build such edifices. Sharma and Deshpande (2017) examine the sense of "sacredness" in Hindu temples with respect to their physical attributes and spatial arrangements, which help devotees focus on the sacredness within the temple, in contrast to the "profaneness" of the surrounding world. Prathamesh and Patil (2017) elaborate on the strategic position of temples. They conclude that 'looking at these structures, it is apparent that the temples were built to a certain pattern, certain understanding and purpose, catering to the needs of the individual and the society. Temples are located strategically at a place where the positive energy is abundantly available from the magnetic and electric wave distributions of north/south pole thrust'.

It seems that there are no studies examining the economic perspective and purpose of those activities. Our paper attempts to extend that literature by addressing the economic angle of religious undertakings.

In this context, it is interesting to examine how Indian kings in the past worked for the welfare of the people in the short- and long-run. In the next section, we discuss two such measures, *Yajñas* or *Yagas* as short- and medium-term relief measures and temple-building for long-term economic development.

SHORT-TERM RELIEF MEASURES IN THE PAST: *Yajña* OR *Yāga*

Yajña or *Yaga* was a common phenomenon during the Vedic age. In fact, it was part of life. There are so many varieties of sacrifices performed for different Gods and different purposes. *Yāga* is a kind of activity wherein the performer disowns or sacrifices something for the sake of Deva-s. A *Yajña* may also be done for the purification of the environment and to ward off the evils like pandemics.

***Yajña* and Social welfare**

There are certain sacrifices like *Rajasuya*, *Aśvamedha* etc. which should be performed only by kings. Though it is generally thought that *Aśvamedha* is performed by a king to demonstrate his imperial sovereignty, a closer look at this event may reveal some more purposes like stimulating economic activities, enhancing the overall welfare of the society etc.

It is quite interesting to see how the performance of a *Yāga* creates a lot of opportunities for employment and economic growth. To start with, this sacrifice lasts for more than a year. It involves a lot of preparations like the construction of *yāgasālā*, *yūpastambha*, *uttaravedī*, *daśapada*, *havirdhāna*, *sadas*, *agnibotraśālā*, *vedī*, and *patniśālā*. Along with these, some temples will be built around the *yāgasālā* for daily worship. And this temple is built not like a make-shift temple but as a regular temple with all the features

like *dvrajastambha*, *baligrha*, *balipīṭha*, *harirdhāna*, *mandapa*, *garbhagrha*, *pratiṣṭhā* and *śaktisthāna*. Hence, it requires a lot of manpower and money power.

In this Section, we examine in detail the *Aśvamedha Yāgas* performed by Daśaratha, Rāma, and Yudhiṣṭhira, as described in the Indian *Itihāsa-s* - Vālmīki Rāmāyaṇa and Vyāsa Mahābhārata.

Reference from Rāmāyaṇa

A. Aśvamedha Yāga by Daśaratha

In the Bālakāṇḍa, we have a vivid description of the sacrifice. Vasiṣṭha Maharṣi, on the directive of the king, invites the Brahman scholars well versed in Veda-s, and elderly architects who are all proficient and experts in the construction of the ritual hall etc. He also orders the construction supervisors, brick-makers, carpenters, earth-diggers, accountants, and sculptors to start the preliminary work for the *Yāga*. Similarly, actors and dancers are also summoned. Clear orders are given to quickly manufacture bricks in many thousands. Numerous royal palaces as temporary guest houses are built for the kingly guests, with all the facilities. Arrangements are also made to build hundreds of sanctified dwellings with a sufficient supply of food and beverages for the Brahmins. In the same way, preparations for accommodation for city dwellers and kings coming from different countries are also made. Horse stables, Elephant stables, and great billets for soldiers are built for the sake of the kings coming from foreign countries. All the lodging facilities are well endowed with grand food and other utilities. Also, elaborate arrangements are made to give food to all the people irrespective of caste and creed (Valmiki Ramayana, 2009a).

This creates job opportunities for many professionals such as architects, civil engineers, carpenters, masons, painters, and interior decorators.

Arrangements for food

During the entire course of the *yajña*, all the people are well fed. Brahmins, servants, sages, pilgrims, aged people, sick people, women, and children ... none are found to be hungry. Food is served to all to their fullest satisfaction. The king's men keep on distributing food and clothes to all as per the order of the king. Men and women who came to take part in that *Yajña* from various countries are very much pleased with the sumptuous food and beverages. This activity provides numerous employment opportunities for people like cooks directly and provision-merchants, transporters etc., indirectly.

Donation (Dāna)

Daśaratha makes a donation of millions of cows, ten crore gold coins and forty crore silver coins to the officiating priests. He donates another crore of gold coins to the Brahmins who have come to see the sacrifice (Valmiki Ramayana, 2009b). This activity can be compared with the direct transfer of money to the people's accounts by modern governments. This increases the buying power of the people which boosts the retail economy.

B. Aśvamedha Yāga by Rāma

We have another reference to *Aśvamedha* in the *Uttaratakāṇḍa*. Rāma decides to perform this sacrifice. Here also we can see the elaborate arrangements made by Lakṣmaṇa at the command of Rāma. All the well-wishers and friendly kings like Sugrīva and Vibhīṣaṇa are invited to the grand event. Specific instruction is given to summon all the ascetics and Brahmins living in different countries.

A large sacrificial ground is prepared on the banks of the Gomati river in the Naimiṣa forest. Hundreds of citizens are invited. To supply food for the entire crowd Rāma orders soldiers to go in advance. Then Bharata goes with millions of carts carrying rice, sesamum seed, kidney bean, chickpea, pulses, salt, oil, clarified butter and a hundred crore gold and silver coins. Merchants are granted permission to set up shops on the way. Actors, dancers, cooks, and cashiers are asked to accompany Bharata.

Bharata and Śatruघna make elaborate arrangements like food, drink, clothes, and accommodation. Kings from different countries arrive with a load of presents like gems etc. and in turn, they are honoured with a variety of food, beverages, and clothes. This is a classic example of economic stimulation.

Donation (Dāna)

As a part of the *Yāga*, Rāma makes generous donations to all the people till they are satisfied. Vālmīki describes that nothing was audible other than the sound of “Give! Give!!”. Thus, the donation was continued for a year! (Valmiki Ramayana, 2009c).

Reference from Mahābhārata

We have many references to *Aśvamedha yāga* in the great epic Mahābhārata also. The *Aśvamedhikaparva* presents a detailed description of the *Yāga* performed by Yudhiṣṭhira (Dutt, 2015).

Preparation

Yudhiṣṭhira orders the Brahmins expert in Vedas to look for a suitable place for the sacrifice. Then Bhīma goes with a lot of men who know the rules of laying out the sacrificial ground and construction of buildings. Innumerable mansions are built near the *yajñassālā* and high and broad roads are laid. Exclusive apartments are made for the ladies and kings who will be coming from different countries. Separate accommodation is also provided for Brahmins who are skilled in the art of conducting the sacrifice. When all the engineers and mechanics completed their tasks Yudhiṣṭhira feels ready for the sacrifice.

Arrangement of food

There was a huge heap of sweets for guests. An arrangement was made to beat the drums and cymbals when one lakh Brahmins were fed. Due to the enormous crowd of Brahmins, the drums and cymbals went on making noise throughout the day. Many hills of cooked rice, large tanks of curds, deep lakes of ghee were always kept ready to be

distributed. Bhīma at the order of the king distributed food ceaselessly to all who desired to eat.

Donation (Dāna)

At the end of the sacrifice, Yudhiṣṭhira made a huge donation of one thousand crore gold coins to the Brahmins. For each priest, he gave one crore gold coins which was three times more than the usual *dakṣinā*. The remaining wealth was donated to others. The sacrifice thus performed by Yudhiṣṭhira was remembered by many for the abundant donation of food, wealth, jewels, and gems. Having showered torrents of wealth, and varieties of objects of desire, countless jewels and gems, limitless food and beverages of fine quality, king Yudhiṣṭhira successfully completed the *Yāga*.

From the detailed description of the *yajña-s*, we can infer that they were performed on a large scale to provide the basic needs of food and accommodation to the people. They created employment for many people with different skills. They also provided direct financial aid in the form of donations of gold coins and other goods. Thus, *yajñas* were used by the rulers for two purposes: direct transfer of money to the needy, and medium-term employment for different sections of the population. The *yajñas* like *Rajasūya*, and *Aśvamedha* were popular before the *Kali-yuga*. But, in *Kali-yuga* such *yajñas* were prohibited. Hence, in *Kali-yuga* the Hindu kings took up construction of massive temples to boost up the economy.

LONG-TERM ECONOMIC STIMULUS MEASURES IN THE PAST: BUILDING TEMPLES

Constructing massive temples is a regular activity of the kings of India to stimulate the economy and create employment. We have many such examples like the Bṛhadīśvara temple of Tanjavur, Mīnākṣī temple of Madurai, Padmanābhasvāmi temple of Trivandrum and so on.

The construction of a big temple is a medium- to long- term project. When the construction starts, immediately a lot of skilled labour like Engineers, Mechanics, Sculptors, Masons, Carpenters, manufacturers of raw materials for construction like brick, lime paste etc., Transporters, Painters and Artists get employment.

After the completion of the temple, its maintenance creates employment for different types of people. For maintenance, kings usually donate a large tract of cultivable land and a large number of cows to the temple. As a result, agriculture and related sectors will progress. Many other types of professionals such as priests for daily worship, cooks for preparing *naivedaya*, gardeners, garland-makers, musicians, dancers, artists, cleaners, accountants, auditors, and managers will also get employment.

Thus, the temples acted more as hubs of economic activity that can provide employment and livelihood to a whole town than as mere religious places. We have a lot of instances of such majestic temples built all over India from ancient times. Let us analyse, for example, the details of the Bṛhadīśvara Temple at Tanjavur built by Rajaraja Chola I.

Bṛhadīśvara Temple

The Bṛhadīśvara temple which is also called as *Rājarajeśvaram* or Big Temple is a magnificent construction by the Chola emperor Rajaraja I. From the inscriptions available, historians opined that the temple might have been constructed between 1003 and 1010 CE (Balasubrahmanyam, 1975a).. The construction of the temple was a massive project and lasted for about seven years.

Rajaraja I endowed the temple with stupendous wealth (Balasubrahmanyam, 1975b). Apart from the images of gold, silver, *pañcaloha* and copper, his donations include gold ornaments, gold vessels and jewels weighing 75,817 *kazhanju*-s (one *kazhanju* = 5.4 grams). He also gifted a lot of pearls, other gems and extensive lands. The king also encouraged his sister Kundavai, his wives and ministers and other officers to make a staggering gift of gold, silver, jewels, and lands.

The revenue generated out of these lands was used to appoint temple staff and to take care of administrative arrangements. The king appointed treasurers, accountants, temple servants, watchmen, and temple-women, etc. (Balasubrahmanyam, 1975c).

Thus, one big project carried out by Rajaraja I, could provide employment to thousands of people and could stabilize and boost the economy of the kingdom. The fact that the Bṛhadīśvara Temple, built more than 1000 years ago, is still providing livelihood to thousands of people even now, shows the vision of those kings in building those massive temples.

After the construction of Bṛhadīśvara Temple by Rajaraja I, his son, Rajendra Chola built a similar massive temple in Gangaikonda Cōlapuram (70 kilometres to the southwest of Tanjavur) in 1035 AD. This temple has a similar design and similar name (Bṛhadīśvara Temple, Gangaikonda Cōlapuram) as the temple in Tanjavur. Another big temple known as Airavateśvara Temple was built by Rajaraja Chola II in the 12th century near Kumbakonam in Tanjavur District. These three Temples built by the Chola emperors were declared by UNESCO in 2004 as a World Heritage Site. The fact that three successive Chola emperors built massive temples indicates that they realized the economic significance of such huge projects.

It may be noted that the activity of building temples was not confined to the emperors or kings. It percolated to the lower levels in the kingdom. While the emperors built massive temples like Bṛhadīśvara Temple in Tanjavur, Mīnākṣī Temple of Madurai, Padmanābhasvāmi Temple of Trivandrum, Śrī Venkatesvara Temple in Tirumala etc., the chieftains built medium level temples. At the lowest level, temples were built in every village. Thus, we can see thousands of temples in every region of India. The inference is that temple-building and maintenance was accepted throughout the kingdom as a viable economic activity. The fact that such a large number of temples were built throughout the country and many of those temples are still surviving indicates that there has been enthusiastic support and participation from the general public for such projects. There must be sustained long-term economic benefits for the people to support those projects.

LESSONS TO BE LEARNT FROM THE PAST

A close examination of the performance of *Yajña* or *Yāga* and temple-construction by rulers in the past offers some lessons to be learnt by modern governments. For such projects to be successful, political leadership and vision are necessary. In the examples

discussed above, Daśaratha, Rāma, Yudhiṣṭhira, and Rajaraja I provided such leadership. They were solidly behind those projects.

For the effective execution of those massive projects, they chose trusted lieutenants as project managers. Thus, Daśaratha chose none other than Vasiṣṭha Maharṣi, his *Kula-guru*, as in-charge of the *Yāga*. The Maharṣi was well-respected by one and all. Rāma appointed his beloved brother Lakṣmaṇa as project manager and the other two brothers, Bharata and Śatrughna, for the very important task of providing food and accommodation. Yudhiṣṭhira chose his brother Bhīma as overall in-charge of the *Yāga*. From the fact that a massive project like the Bṛhadīśvara Temple at Tanjavur was successfully built in just seven years we can infer that Rajaraja I must have appointed very capable and trusted persons as managers. In the modern age, many big projects are plagued by delays, corruption, and cost-overruns because wrong people are appointed for wrong positions.

Another lesson is that the projects chosen by the governments should be appropriate to the times in consideration. Thus, *yajñas* like *Rājasūya*, and *Aśvamedha* were popular before the *Kali-yuga*. But, in *Kali-yuga* such *yajñas* were prohibited. Hence, in *Kali-yuga* the Hindu kings took up the construction of massive temples to boost the economy.

Modern governments are facing the questions of how much money (as a percentage of GDP) should be spent on stimulus packages and in what form. Our discussion of the *Yāgas* suggests that in times of need, the rulers should not hesitate to spend money for providing relief to the people. The detailed description of the elaborate arrangements made for providing shelter and food distribution suggests that the Kings must have spent enormous amounts of money. As noted in Section 3, Daśaratha, Rāma, and Yudhiṣṭhira made generous *Dāna* to all the people till they are satisfied.

After completion of the Bṛhadīśvara temple Rajaraja I endowed the temple with stupendous wealth for its maintenance. The king also encouraged his sister Kundavai, his wives and ministers and other officers to make a huge gift of gold, silver, jewels, and lands. It is customary for all Hindu kings to donate huge tracts of land to the temples. This practice ensured that those massive projects continue to bestow economic benefits for a long time. Thus, the lesson is that in the case of long-term projects it is not enough to build the projects. Sufficient funds should be provided for the maintenance of those projects. Otherwise, the whole investment will be a waste.

Finally, any project or relief measures will be successful only with the whole-hearted support of the public. That is a precondition. Many men and women came to take part in Daśaratha's *Yajña* from various countries. Similarly, a large number of people participated in the *Yāgas* of Rāma and Yudhiṣṭhira. The fact that three Chola emperors built three massive temples in quick succession suggests that those projects were very popular and had the full backing of the public. Nowadays, many projects (e.g., nuclear power plants, big river dams) are vehemently opposed by the public on environmental considerations and dislocation of native population. The success of such a project is doubtful.

CONCLUSION

The COVID-19 pandemic, which has been ravaging most of the countries in the world, is causing serious damage to their economies. Prolonged and deep recessions are forecast for many countries. Business activity is down and unemployment is rising. To shore up the economies various governments announced stimulus packages. These include short-term and long-term measures. Economists and policymakers are seriously contemplating how to put together these packages. Experts are of the view that political leadership and vision are necessary for the measures to succeed.

In this context, it is interesting to examine how Indian kings in the past acted when faced with economic crises arising out of natural or man-made calamities. Prior to *Kali-yuga*, kings used to perform *Yajña* or *Yaga* on a large scale and make huge donations (*Dana*). These provided relief and employment in the short- and medium- terms. In *Kali-yuga* kings took up construction of massive temples. These long-term projects provided large scale employment during and after the construction of the temples. A detailed analysis of the two activities (*Yaga* and temple construction) suggests that the critical factors needed for the successful implementation of economic relief measures and long-term projects are: political leadership and vision, appointing capable and incorruptible people as managers, taking-up projects appropriate to the times, rulers ready to spend money, providing arrangements for maintenance of long-term projects after their completion, and enlisting public support for the measures.

Policymakers around the world are struggling in structuring economic relief measures. Some of the questions they are faced with are: proportionate allocation of funds to short-term and long-term needs, how much money to spend, direct and indirect ways of providing relief to the people, and how to prevent corruption in execution so that the benefits reach the needy, and how to ensure public support.

Our research on the experience of past Indian rulers suggests some answers to these difficult questions.

Several studies examined various aspects of *Yajñas* and temples. However, the economic significance of those activities is conspicuously absent in that research. Our study extends the extant literature on religious activities by providing an economic perspective to them. We believe that our paper may open up a new area in interdisciplinary research “The Economics of Religion”, that is, examining religious events/activities from an economic standpoint. Further research in this area by analysing the historic and religious texts of India may provide insights to address some of the modern economic problems. Studies may also be undertaken to explore other cultures, such as USA, Japan, and China, from an economic angle.

REFERENCES

- Acharya, S.S. 2001. The integrated science of Yagna. Compiled by: Dr. Rajani Joshi Indian Institute of Technology, Mumbai. Publisher: Shantikunj, Haridwar (U.A), India, First Edition.
- Ahmad, N. N., W.N. W. Hanafi, W.M.T.W. Abdullah, S. Daud, and S.N. Toolib. 2020. The

- effectiveness of additional PRIHATIN SME economic stimulus package (PRIHATIN SME+) in Malaysia post-COVID-19 outbreak: A conceptual paper. *Global Business & Management Research* 12(4).
- Allam, Z. 2020. Vital COVID-19 economic stimulus packages pose a challenge for long-term environmental sustainability. *Surveying the Covid-19 Pandemic and its Implications* 97.
- Balasubrahmanyam, S. R. 1975a. *Middle Chola Temples Rajaraja I to Kulottunga I (A.D. 985-1070)*. <https://archive.org/details/MiddleCholaTemplesRajarajaIToKulottungaIAd9851070/page/n55/mode/2up>
- Balasubrahmanyam, S. R. 1975b. *Middle Chola Temples Rajaraja I to Kulottunga I (A.D. 985-1070)*. <https://archive.org/details/MiddleCholaTemplesRajarajaIToKulottungaIAd9851070/mode/2up>
- Balasubrahmanyam, S. R. 1975c. *Middle Chola Temples Rajaraja I to Kulottunga I (A.D. 985-1070)*. <https://archive.org/details/MiddleCholaTemplesRajarajaIToKulottungaIAd9851070/page/n113/mode/2up>
- BBC. 2020. Japan announces new Covid-19 stimulus for economy. December 8. <https://www.bbc.com/news/business-55226200>.
- Business Standard. 2020. Corona virus will result in high NPAs and capital erosion: RBI Governor. July 12. https://www.business-standard.com/article/finance/coronavirus-pandemic-will-result-in-high-npas-and-capital-erosion-rbi-guv-120071100297_1.html
- Das, A. 2020. A relief and recovery blueprint for India's economy. *MSN*, July 13. <https://www.msn.com/en-in/money/topstories/a-relief-and-recovery-blueprint-for-indias-economy/ar-BB16EBbg?li=AAggbRN>.
- Dutt, M.N. 2015. Mahabharata. Internet archive. <https://archive.org/details/TheMahabharataMNDutt>/mode/2up
- Government of India. 2020. Building atmanirbhar bharat and overcoming covid-19. June 03. <https://www.india.gov.in/spotlight/building-atmanirbhar-bharat-overcoming-covid-19>
- Hutt, R. 2020. The economic effects of COVID-19 around the world. *World Economic Forum*, February 17. <https://www.weforum.org/agenda/2020/02/coronavirus-economic-effects-global-economy-trade-travel>.
- International Monetary Fund. 2020a. Policy response to COVID-19. <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#J>.
- International Monetary Fund. 2020b. Policy response to COVID-19. <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#I>.
- Jianguang S. 2020. China's 'six priorities' and fiscal stimulus will spearhead its COVID-19 recovery, *WE Forum* June 8. <https://www.weforum.org/agenda/2020/06/china-stimulus-covid19-economic-recovery/>.

- KPMG Global. 2020a. Government and institution measures in response to COVID-19. July 22. <https://home.kpmg/xx/en/home/insights/2020/04/japan-government-and-institution-measures-in-response-to-covid.html>.
- KPMG Global. 2020b. Government and institution measures in response to COVID-19. June 17. <https://home.kpmg/xx/en/home/insights/2020/04/china-government-and-institution-measures-in-response-to-covid.html>.
- Narayan, P. K., D.H.B. Phan, and G. Liu. 2021. COVID-19 lockdowns, stimulus packages, travel bans, and stock returns. *Finance research letters*, 38, 101732.
- Nhamo, G., K. Dube, and D. Chikodzi. 2020. Tourism economic stimulus packages as a response to COVID-19. In *Counting the cost of COVID-19 on the global tourism industry*: 353-374. Springer, Cham.
- Pandey, A., I. Kizilca, and X. Kong. 2020. Impact of COVID-19 on the EPC Sector in Asia: Outlook remains robust for the infrastructure sector. *AIIIB*, June 9. <https://www.aiib.org/en/news-events/media-center/blog/2020/Impact-of-COVID-19-on-the-EPC-Sector-in-Asia-Outlook-Remains-Robust-for-the-Infrastructure-Sector.html>.
- Panwar, D., R.R. Singh, and N. Kulshrestha. 2021. Importance of Yagya in treating Covid-19 conditions – A classical. *World Journal of Pharmaceutical and Life Sciences (wjppls)* 7(6): 51-57.
- Prasad, E. 2020. How the economy will look after the Coronavirus pandemic. *Foreign Policy*. April 15.
- Prathamesh G. and U. Patil. 2017. A Review study on architecture of Hindu temple. *International Journal for Research & Development in Technology* 8(4): 244-250.
- Rastogi, R., D.K. Chaturvedi, M.K. Rastogi, S. Chauhan, V. Aggarwal, U. Agrawal, and R. Singh. 2022. Examining vedic yajna's effects on the AQI of India in the second wave of the COVID-19 pandemic: An healthcare 4.0 concept for smart cities 5.0. *International Journal of Information Systems and Social Change (IJISSC)* 13(1):1-20.
- Reuters. 2020. China to ramp up spending to revive economy, could cut growth target – sources. March 19. <https://in.reuters.com/article/us-china-economy-stimulus-exclusive/exclusive-China-to-ramp-up-spending-to-revive-economy-could-cut-growth-target-sources-idINKBN2161NW>.
- Sharma, S. and S. Deshpande. 2017. Architectural strategies used in Hindu temples to emphasize sacredness. *Journal of Architectural and Planning Research* 34(4): 309–319.
- Siddik, M. N. A. 2020. Economic stimulus for COVID-19 pandemic and its determinants: evidence from cross-country analysis. *Heliyon* 6(12), e05634.
- Singh, R. and S.K. Singh. 2018. Gayatri mantra chanting helps generate higher antimicrobialactivity of yagya's smoke. *Interdisciplinary Journal of Yagya Research* 1(1): 09-14.

- The Hindu Net Desk. 2020. At 10% of GDP, modi's atma-nirbhar bharat abhiyan ranks among biggest in world. *The Hindu* May 13. <https://www.thehindu.com/business/businesslive-13-may-2020/article31571094.ece>
- The Washington Post. 2020. Stimulus talks could spill into weekend as lawmakers scramble to complete deal. December 17, 2020. <https://www.washingtonpost.com/us-policy/2020/12/17/stimulus-checks-900-billion-relief-package/>
- U.S. Congress. 2020a. H.R.748 - CARES Act 116th Congress (2019-2020). <https://www.congress.gov/bill/116th-congress/house-bill/748>
- U.S. Congress. 2020b. H.R.6201 - Families First Coronavirus Response Act 116th Congress (2019-2020). <https://www.congress.gov/bill/116th-congress/house-bill/6201/text>
- U.S. Department of the Treasury, 2020. Paycheck protection program. <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-small-businesses/paycheck-protection-program>
- Valmiki Ramayana. 2009a. Book I: Bala Kanda - The Youthful Majesties Chapter [Sarga] 13. https://www.valmikiramayan.net/utf8/baala/sarga13/bala_13_frame.htm
- Valmiki Ramayana. 2009b. Book I: Bala Kanda - The Youthful Majesties Chapter [Sarga] 13. https://www.valmikiramayan.net/utf8/baala/sarga14/bala_14_frame.htm
- Valmiki Ramayana. 2009c. <https://sanskritdocuments.org/mirrors/ramayana/valmiki.htm>
- Vardia, S. 2008. Building Science of Indian Temple Architecture. https://www.researchgate.net/publication/322852250_Building_Science_of_Indian_Temple_Architecture
- Xiaochen. S. 2021. Why isn't China's COVID-19 stimulus going directly to workers? *The Diplomat* February 25. <https://thediplomat.com/2021/02/why-isnt-chinas-covid-19-stimulus-going-directly-to-workers/>.