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Comparative Analysis on relation between Taxes and Inflation of India and Australia

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ABSTRACT

The purpose of this paper is to identify, establish and analyse the relation that exists between inflation and taxes. A comparative analysis between the economies of Australia and India has been conducted in order to study different scenarios that were and are being experienced in these economies. The economy of India is a developing one whereas the Australian economy is considered as a developed economy which gives a lot of prospects for study and research purposes. In order to study the same, consumer price and tax revenue has been considered for the variables of inflation and taxes respectively. For a better and more comprehensive understanding under tax revenue taxes on goods and services and taxes on income, profits and capital gains have been studied.. When higher taxes are imposed, the inflation is forced to decrease and the same relation has been extensively studied in the paper.

Keywords: *Inflation, Tax revenue, economy, India, Australia.*

I. INTRODUCTION

Governments levy taxes on residents of a country to create revenue for projects that would strengthen the country's economy and increase the standard of living for its residents. Payment of taxes benefits the nation on various levels, including national development, infrastructure improvement, societal elevation , and implementation of national welfare programmes. Taxes are not only payments that generate revenue for the government, but also are considered to be an influential fiscal policy tool for the government which helps in determining how the revenue has to be curtailed or loosened in the economy based on the various factors such as spending and demand for goods and services by the consumers within the economy.

Inflation is a measure of the rate at which the price of goods and services in the economy rises. With rise in inflation, the value of money reduces and as price stability is hindered both economic growth and long-term development is affected.

Taxation can be considered as a very important fiscal policy tool for checking up and

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controlling significant levels of inflation in an economy. As taxes are classified to be fiscal policy tools, the government can intervene to command over inflation through it. The realm of taxation is not limited to one type of tax and therefore different types of taxes come under the comprehensive term which gives the government varied options and ways to adjust the tax system in order to control the inflation.

The aim of this study is to understand the correlation between inflation and taxes while comparing two countries – India and Australia.

II. Variables

Following are the variables which will be considered for the study.

(A) Inflation, Consumer prices (Time period 1973-2020)

1. Australia: During 1973-1990, Australia experienced a condition of tenacious high inflation. The situation of high inflation was established during the late 1960s but after the global oil price shock in 1973, the rise in inflation was very sharp. As a result of this shock, the Australian economy faced stagflation which recognised condition of high inflation as well as high unemployment. In the latter half on 1970s a period of disinflation was observed, but a second oil price shock during 1978-79 occurred which again caused rapid inflation acceleration. Real wages were allowed to decrease which lessened the labour market's contractionary influence. Improvement in the global economic activity during 1986, raised the commodity prices which helped in appreciating the Australian dollar, and inflation remained high in the economy until late 1990.

2. India: Inflation in India was moderate after independence and it began to rise fast only in the 1960s, owing to two wars with China and Pakistan, as well as agriculture failures in 1965 and 1966. It reached 20% and above in the early 1970s due to a combination of lower agricultural production and an unusual increase in worldwide oil prices. In terms of inflationary pressures resulting from agricultural and oil prices, the decade of the 1970s was the most volatile period for India.

In Australia the basket includes wide placement of goods and services which are divided in eleven groups i.e. Food, Alcohol and Tobacco, Clothing and Footwear, Housing, Household contents and services, Health, Transportation, communication, recreation, education and financial services.

India too has similar basket of commodities but it is divided in six groups which includes Food and beverages, Pan tobacco and intoxicants, Clothing and footwear, Housing, Fuel and light

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and items such household goods and services, health, transportation and communication, recreation, education and personal care come under the basket of Miscellaneous items.

(B) Tax Revenue (Time period 1973-2018)

1. Australia: Each of the six Australian colonies had its own tax system toward the end of the nineteenth century, which was essentially fully based on customs and excise duties. Administrative issues dominated the construction of these tax regimes, rather than ideals of equality or efficiency. Australia's tax take (defined as the tax to GDP ratio) increased dramatically over the twentieth century, in accordance with the rising role of government in most industrialised countries. Australia's tax-to-GDP ratio was roughly 5% until the establishment of the federal income tax in 1915, which was needed to pay Australia's war efforts during the first world war and this ratio stayed relatively steady. Between the two World Wars, government spending and tax income increased dramatically, finally reaching 11% of GDP. Income taxes were imposed at both the state and federal levels during 1915 and 1942, resulting in a complex and unfair taxing of income among regions. Australia's taxation system underwent significant modifications during the second world War. The federal government centralised income taxation in 1942 to enhance revenue. As a result, the revenue base of the states was diminished, and federal government grants were replaced. In the middle of the twentieth century, tax revenues were on the decline, but between 1973 and 1975, they climbed dramatically. The federal government's reliance on direct taxes - primarily income tax as a key tax source had grown over the twentieth century. The connection between consumer and corporate taxation, and the implementation of a broad-based goods and services tax in 2000, have all been major areas of tax reform in the last 25 years. A variety of inefficient federal and state indirect taxes were replaced by the goods and services tax. (Sam Reinhardt and Lee Steel, 2006)

2. India: India has a well-developed tax system with defined lines of jurisdiction between the central and state governments, as well as municipal governments. The execution of the Taxation Enquiry Commission's findings marked the beginning of the systematic evolution of the tax system in independent India. The commission's report was published in 1953–54, but due to the ideological stance of the Second Five-Year Plan (1956–60), Nicholas Kaldor, a Cambridge professor, was asked to write a new report on Indian tax reform. The resources for the Second Five-Year Plan were raised with the help of this report, which was published in 1956. Kaldor advocated for the imposition of an expenditure tax to restrict consumption and boost savings, which he estimated to be at an all-time low of approximately 10% of GDP. This tax, however, had to be repealed in 1957–58 due to its ineffectiveness. The Direct Taxes

Enquiry Committee recommended a large drop in marginal tax rates in 1971, citing disincentives such as the high rate of return on tax evasion, low probability of detection, and an inadequate legal system that failed to impose penalties within an acceptable time frame. The Indirect Taxes Enquiry Committee tried a big simplification exercise on the indirect taxes side. However, it was not until 1986 that the committee's significant recommendations were put into action. The ratio of tax revenue to GDP progressively climbed from 6.3 percent in 1950–51 to 10.41% percent in 1987–88. To finance substantial public sector plans in the early years of planning, an increase in this percentage was required, and the increase was relatively easy because it began from a low foundation. The next period began with a recession brought on by the severe drought of 1987, which was characterised by revenue stagnation. Following the 1991 economic crisis and subsequent tax reforms, including tariff reductions, the tax ratio decreased. Thus the tax ratio fell from 10.17% in 1991–92 to 9% in 1997–98, then fluctuated at about 8% until 2001–02. Although the tax ratio has risen since then, it was yet to achieve the levels that existed before to the implementation of systematic tax reforms in 1991. Since 1987–88, the fall in the total tax ratio has primarily happened at the central level, which accounts for around 60% of the total. Between 1950–51 and 1985–86, the tax ratios of both the federal and state governments climbed dramatically. The central tax ratio peaked in 1987–88 and stayed there until the fiscal crisis of 1991–92, when it drastically decreased until 2001–02 and by 2004–05, it had nearly recovered to its pre-1991 level (Partap Singh,2019). To address the concerns regarding difficult calculation of direct and indirect taxes within the country, the Indian government attempted to simplify both. Because of the same reason, the administration proposed replacing all indirect taxes with GST (goods and services tax) and direct taxes with DTC (direct tax code). In terms of implementation, GST took top place out of the two.

For this study both direct and indirect taxes are included. Taxes on income, profits and capital gains as percentage of tax revenue will be observed under direct tax and Tax on goods and services as percentage of tax revenue will be observed under indirect tax.

III. Analysis

Inflation is characterized by an increase in the price of goods and services purchased by households. Prices usually increase over time, but they can also fall.

The Consumer Price Index (CPI), that gauges the percentage change in the price of a basket of goods and services consumed by households, is the most well-known indicator of inflation. Inflation, consumer price (annual %) represents the trend of inflation based on consumer price Index. Within the Australian as well as Indian economy, consumer price index has seen a steady

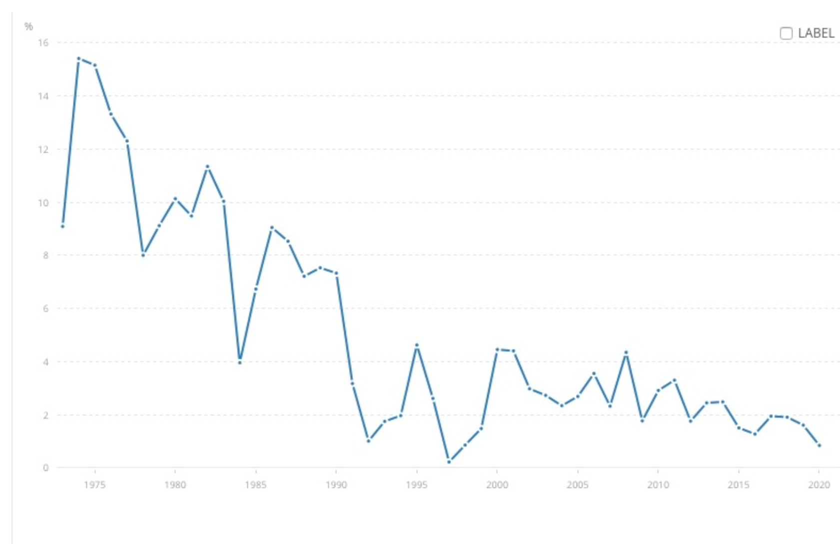
growth, and as the wages for people who are employed in the economy has also increased over the years, rise in the weighted average of the basket of goods and services can be justified. A continuous rise in the CPI does not indicate that the inflation rate too will always be on a rise, as the inflation rate is measured as the percentage change in the index over a period of time. It can be represented as follows:

$$Inflation = \frac{Price_{Year\,2} - Price_{Year\,1}}{Price_{Year\,1}} \times 100$$

Both the economies have faced various fluctuations in their inflation rates over the mentioned stretch and while Australia has had a persistent inflation rate that has been around 1-2% during the past decade, India has observed continuous fluctuations wherein the inflation rates vary from 4-6%.

Unexpected changes in the global economy, such as an oil price shock, create an initial acceleration of inflation or disinflation (a reduction in the inflation rate), frequently with a lag. The impact of this adjustment is then amplified by domestic economic conditions.

The government of a country through its fiscal policy tools can intervene to make the necessary adjustments and Taxes being one of the fiscal policy tools, can be studied for the same.



Source: *World Bank Open Data (Inflation, consumer prices [annual %]- Australia)*

The graph above shows the **annual inflation rate in Australia** from 1973 to 2020. In 1973 Australian economy had inflation at 9.09% and by the end of 1960s the economy of the country was showing signs of rising inflation because there was stable international growth which contributed to limited volatility in import and export prices. Demand was stifled by the

contractionary fiscal policy i.e. when government taxes more than what it is spending; and these policies held the inflation rate at an optimum level and contributed to steady growth in the output. The economy was doing very well until the Global oil crisis in 1973, which contributed to a stark rise in the inflation rates, not only in Australia but worldwide. There have been two significant oil crises in the post-World War II period. The first was in 1973, when Arab OPEC members (Organization of Petroleum Exporting Countries) voted to double oil prices to around $12 a barrel. OPEC made the decision in retribution for Western support for Israel against Egypt and Syria during the Yom Kippur War (1973), as well as a sustained decrease in the value of the US dollar (the main currency for oil sales), which had undermined OPEC states' export revenues. Because oil is the primary source of energy for developed industrial economies, an oil crisis might jeopardise global economic and political stability. These acts resulted in a severe recession and soaring inflation. Despite the lifting of the oil embargo in 1974, oil prices remained high and the capitalist world economy stagnated throughout the 1970s. Australia during this crisis observed a jump in inflation rates from 9.09% to 15.41%. It was the year in which the Australian economy tanked. It began with a rate of 2% unemployment and finished with a rate of 5% unemployment. Everyone's job generating had come to an end. The price shock contributed in stagflation , as well as a sharp spike in commodity prices. Aside from that, large capital inflows in 1971 and 1972, combined with a boost in domestic income as Australia's terms of trade improved, contributed to rising inflation through accelerating money supply expansion. At the start of the 1970s, there were significant changes in labour market conditions. Although the Australian Conciliation and Arbitration Commission could ensure that wages grew in lockstep with the CPI, it had limited power to prohibit pay from rising faster than inflation. Low unemployment rates toward the end of the 1970s, huge increases in public sector earnings, and court decisions establishing gender parity in minimum salaries were all factors (Stevens, 1992). Each of these variables raised the cost of labour, contributing to substantial inflation in the early 1970s- The Australian Council of Trade Unions demanded a $10 weekly wage increase as well as quarterly salary tax relief to account for price increases. As global demand slowed, wage increase demand accelerated which led to Thousands of people being laid off by companies (increase in unemployment). After all the catastrophe, during the latter part of the 1970s, Wage indexation (wage increases linked to CPI increases) was implemented in, coinciding with a brief period of deflation prior to the second oil price shock. A second oil price shock in 1978-79 was a result of the Iranian Revolution. The Iranian oil industry has been seriously harmed by high levels of societal unrest, resulting in a huge loss of output and a corresponding spike in pricing. led inflation to accelerate rapidly

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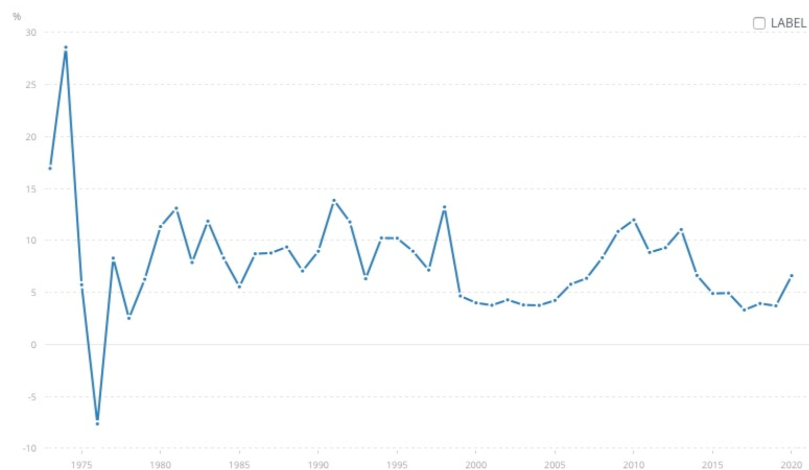
once more. Before the oil price shock the inflation stayed at 8% but then it went up to 9.12%. The second oil price increase was less severe than the first because substantial increases in export prices were matched by equivalent increases in import costs, reducing the impact on trade terms (Stevens, 1992). Rising unemployment and a wage freeze in 1982 pushed inflation lower to a rate of 3.96% by 1984 . The baseline level of real wages chosen for indexation in 1975 was too high at a period when wage growth was outpacing productivity growth this meant that, while nominal wage growth decreased in lockstep with inflation, the drop in nominal wage growth was insufficient to persuade businesses to hire more workers.

As import costs soared in 1985, inflation began to rise but following the second oil price shock, individual wages were permitted to fall, reducing the contractionary impact on the labour market and contributing to better economic activity in the second half of the 1980s.When global economic activity rebounded in 1986, higher commodity prices eventually led to an appreciation of the Australian currency and a significant improvement in the terms of trade, that contributed to the Australian economy's high yet manageable inflation rate.

In 1991 Australia experienced recession- The international Stock Market Slump of October 1987 saw markets all over the world tumble. The crisis began when Japan and West Germany raised interest rates, causing US rates to rise as well, resulting in a major sell-off of US stocks. The global stock market sank by an average of 25%, whereas Australia's stock market plunged by 40%. The unemployment rate in Australia reached an all-time high of 11% during the 1991 recession and remained there for several years. As a result of the lower domestic demand, year-end inflation fell to 1.01 percent in late 1992, the lowest level in thirty years. The Australian economy has seen moderate inflation for the majority of the time since the 1991 recession, with annual CPI movements remaining below 5% for the most of the time. The RBA's creation of a 2-3% medium-term objective for consumer price inflation in 1993 explains a substantial part of this occurrence. As a result of the Asian Financial Crisis (AFC)-Exports to East Asia and commodity prices both dropped dramatically, resulting in a worsening of the terms of trade, while import prices also plummeted, compounding the deflationary impact; in 1997, the Australian economy briefly experienced deflation as the inflation rate was about 0.22%. Although the official inflation rate remained low over the next two years, the deflationary shock generated by the AFC was only temporary.

Australia experienced its highest rate of inflation i.e. 4.45% since the implementation of the 2-3% inflation target in the third quarter of 2000, due to the implementation of the 10% Goods and Services Tax on July 1, 2000. This inflationary episode was a one-time occurrence. This had a short-term influence on the CPI, with inflation soon returning to normal in the following

quarters and since then the Australian economy has observed persistent low inflation rates. Even during the global financial crisis of 2008, this economy managed to keep its inflation rates at 4.35% which was a result of high commodity prices and growing domestic demand. Until 2020, when the country underwent a brief recession and unemployment rose due to the global COVID-19 pandemic, Australia experienced almost two decades of economic expansion, moderate inflation, and relatively low unemployment.



Source: *World Bank Open Data (Inflation, consumer prices [annual %]- India)*

The graph above shows the **annual inflation rate in India** from 1973 to 2020. In the initial phase of the time period chosen, the pattern of the inflation rates fluctuations, look similar to that of Australia, but while the Australian economy experienced inflation at around 15.41% during the global oil crisis, India's inflation rate was at whopping 28.59% (by the end of 1974). In terms of inflationary pressures stemming from agricultural and oil prices, the decade of the 1970s was the most volatile for India. The highest rate of inflation was recorded in September 1974, when it was 33.3 percent. The country's greatest inflationary event occurred between November 1973 and December 1974, when inflation never fell below 20% and was above 30% for four consecutive months beginning in June 1974. In 1976, the Indian economy observed negative inflation i.e. the inflation rate was -7.63%, reason being the national emergency which was declared on June, 1976. The purpose of the country's 21-month-long Emergency was to prevent "internal disruption," for which constitutional rights were suspended and freedom of speech and the press were revoked. Prime Minister (at the time) Indira Gandhi justified the severe move as being in the national interest for three reasons. First, she said that Jayaprakash Narayan's campaign was endangering India's security and democracy. Second, she believed

that there was a pressing need for quick economic development and the upliftment of the poor. Third, she warned against foreign countries interfering in Indian affairs, which might destabilise and weaken the country. Growing unemployment, widespread inflation, and food shortage characterised the months leading up to the declaration of the Emergency. The poor state of the Indian economy was accompanied by riots and protests in several sections of the country. (Adrija Roy Chowdhury, 2018)

In 1979-80, significant inflation returned due to a rise in oil costs and weak agricultural productivity. During the 1980s, inflation averaged 7.2 percent per year, with significant reductions in inflation fluctuation. Between 1985-86 and 1990-91, inflation ranged from 4.4 percent to 10.1 percent. This period did not observe any sudden rise or fall in the inflation rates.

Under pressure from the IMF and the World Bank, the Indian rupee was depreciated by roughly 37% against the US dollar between March 1991 and March 1992, in order to secure a $7.2 billion loan from the IMF. Dr. Manmohan Singh, the then-Finance Minister, was the one who did it. As a result of the Narsimha Rao government's reforms implemented under Washington consensus, there was a substantial spike in inflation throughout four of the first five years of the 1990s, which saw double-digit inflation; highest inflation in a decade was observed in 1991 wherein the rate was 13.89%. From 1995-96 onwards, there had been a steady reduction in inflation, and in 1998 sudden rise in inflation rates was observed due to consumer inflation from industrial workers and agricultural labourers.

First few years of the new millennium observed low rates of inflation which varied between 4.5% to 5.7%. During the Global financial crisis of 2008, India observed a rising trend in its inflation rates- In 2008, an era of historically low consumer inflation that began in 1999 finally ended. Substantial raw material prices, such as basic metal alloys and metal products, non-metallic mineral products, and machinery and machine tools, contributed to high inflation in manufactured goods in 2008-09.

The year 2010 recorded highest inflation rate – 11.98% in the country since 1998. Since December 2010, there had been a strong cost-push and demand-pull strain due to unseasonal rains following the monsoon and rising global commodity prices. During the months of April through July 2010, food products were the leading drivers of price increases.

In 2013 when the inflation rate was 11.06%, the Indian economy had been in a difficult condition, with economic growth slowing to a decade low and rising price pressures. The central bank's policy decision was further complicated by weak growth and excessive inflation. Industrial output fell 1.8 percent in October, according to the Central Statistics Office,

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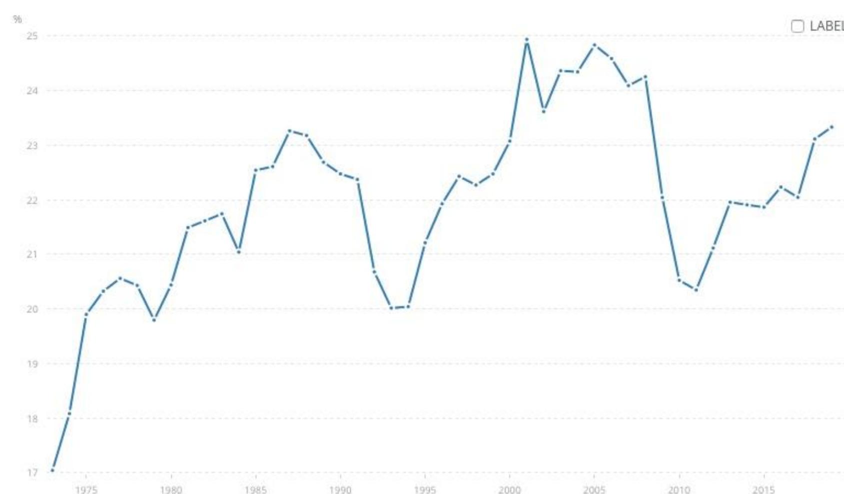
compared to an annual increase of 8.4 percent in the same month previous year. It was slightly lower than the 2% increase in output reported in September of last year. Inflation was causing mayhem on the manufacturing sector and the economy as a whole. Since March 2010, when the RBI hiked interest rates 14 times to contain inflation, the economy has been negatively impacted.

After 2013, a steady decline in the inflation rates was witnessed in the Indian economy and only lately the inflation rate increased from 3.72% to 6.62% in India owing to the pandemic. Consumer inflation had already surpassed the upper tolerance level of 6% in December 2019, even before the epidemic started and into the pandemic, the rate of 6% inflation is maintained. India is in a tough spot, with inflation above the target as economic growth slowed to 3%, a significantly low level. India's supply pressures are so severe that inflation has stayed high across the board, notwithstanding reduced demand during the early lockdown, pent-up demand throughout the Festive season, and even a modest drop in confined demand. (Bhagwati Paraksh Sharma, 2014)

While observing all the situations and conditions, it can be noted that the fluctuations which are observed in the Indian economy are very sudden and whenever the inflation rates experience a spike, the rise accelerates quite quickly. On the contrary, in the Australian economy the situation of inflation sustains over a period of time and the rates increase or decrease gradually as compared to the swing within the Indian economy.



Source: World Bank Open Data (Tax Revenue [% of GDP] – Australia)

The graph above shows the **Tax revenue in Australia** from 1973 to 2018.

The revenue that is earned from taxes is diverse as it includes various heads such as taxes on income, property, goods and services, import, export etc.

For this study the researcher will be focusing on taxes on income, profits and capital gains and taxes on goods and services.

In Australia, during the nineteenth century, the tax revenue was completely dependent upon the customs and excise duties and eventually federal income tax was introduced in the country. Income taxes were imposed at both the state and federal levels, resulting in inequitable income taxation among states. As a wartime measure, the federal government centralised income taxation in 1942 to enhance revenue. Between 1973 and 1975, revenue from taxes climbed dramatically, owing to increasing support for social programmes. Since then, Australia's tax revenue has risen modestly, as is the case in many other OECD countries. Since 1975, the government of Australia relied on direct tax and income tax became the primary tax base.

To include better interaction between personal and business transactions, facilitate co-ordination between state and centre and to improve efficiency in filing of taxes, Goods and service tax was introduced in 2000 which replaced many inefficient federal and state indirect taxes in the country

To understand the relation that exists between taxes and inflation, the researcher will look into the time periods that were characterised by inflationary conditions wherein the government intervention would have been necessary. The different circumstances over the years, mentioned while describing trend of inflation rates in Australia will be considered while studying the tax revenues.

During 1973, Tax revenue in Australia accounted for 17.04% of the Gross domestic product (GDP) where taxes on income, profits and capital gains contributed to 59% of the total revenue which was collected, and taxes on good and services were attributed for 22% of the revenue. With the advent of the first Global Oil price shock, the inflation in the Australian economy shot up to 15.41% and in the same year, the tax revenue also increased to 18.08%. To this an increase in the collection of taxes on income, profits and capital gains was also observed as it accounted for 61.35% of the revenue, but a gradual decrease was observed in the contribution of taxes on goods and services as it reduced to 21.68% of revenue. The year which succeeded the Global Oil price shock i.e. 1975 saw significant rise in the tax revenue as it increased from 18.08% to 19.9% and the similar trend was noticed in the taxes on income, profits and capital gains as that too increased to 64.57% whereas taxes on goods and services further reduced to 19.06%

of the revenue. After the first oil price shock as the unemployment in the country increased , the inflation reduced to 8% by 1978, but because of second global oil price shock, inflation rate again saw a rise from 1979, when it increased to 9.12%. The impact of this situation was not as adverse as compared to the first oil price shock as the economy was already conditioned and the tax rates during this period were increased again, which led to higher contribution of tax revenue to GDP i.e. 20.44%.

Even though the oil price shock did not cause much havoc in the Australian economy, rising unemployment and a wage freeze during 1982 lowered the inflation rate in Australia from 10.03% to 3.96% in 1984. During this period the tax revenue following the decreased inflation rate also reduced from 21.74% in 1983 to 21.04% in 1974. Taxes on income, profits and capital gains was observed to be at its lowest since 1972 i.e. only 58.86% of revenue. On the contrary, taxes which were collected from goods and services saw a hike and this tax accounted for 25.30% of the revenue as due to low inflation, the tax levels reduced and thus the goods and services became less expensive.

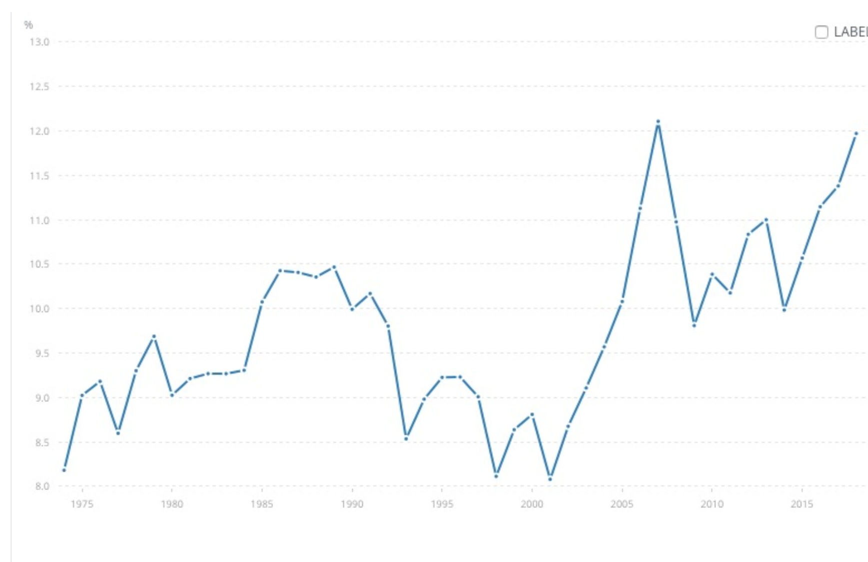
1992 marked a period of recession in the Australian economy as the value of Australia's stock market plummeted by 40%. Tax revenue fell to 20.68% during 1992 and further sank to 20.01% as less revenue was collected due to the existing recessionary condition. Taxes on income, profits and capital gains as well as taxes on goods and services observed a downward trend for their contribution towards the tax revenue.

In 2000 Australia experienced inflation because of its decision to implement goods and service tax in order to maintain uniformity in tax collection from the different states of the country. Because of this decision, the tax revenue increased in 2000 (23.07% of GDP) and further progressed in 2001 (24.94%) as the rollout of the Goods and Service tax became consistent and permanent. Taxes on income, profits and capital gains increased too, but the contribution of taxes on goods and services to the revenue soared from 17.90% in 2000 to 24.27% in 2001.

After the global financial crisis in 2008, the inflation rates in Australia accelerated which resulted in an increase in the Tax revenue, but soon the rates deaccelerated which reduced the tax revenues too and since then, the fluctuation trends in both inflation rates and tax revenue has been consistent and low.

The recent data (up to 2018) available regarding tax revenue indicate an increase in the Tax revenue (23.11% of GDP) while inflation exists at 1.61%. Taxes on income, profits and capital gain account for 65.17% of the revenue, whereas the contribution of taxes on goods and services has reduced to 20.44%.

Addressing the current situation (2020) of a global pandemic, the Australian economy has managed to keep its inflation low i.e. 0.84% and based on previous patterns it can be asserted that the tax revenue (as % of GDP) might decrease. One of its components - Taxes on income, profits and capital gains can also experience reduction on its response to the tax revenue, whereas taxes on goods and services can experience a slight raise as the consumers will always demand goods and services (demand can also see an increment as a result of low inflation), and the amount of tax that will be collected through these facilities will contribute towards the revenue earned by taxing commodities.



Source: World Bank Open Data (Tax Revenue [% of GDP] – India)

The graph above shows the **Tax revenue in India** from 1974 to 2018.

Although India has a long history of tax reforms, systematic and thorough reforms did not begin until 1991, when the Tax Reforms Committee (TRC), also known as the Raja Chelliah Committee, drew out a road map for restructuring the tax structure in the aftermath of an economic crisis. Because India is a federal country, taxation authorities are allocated between the centre and the states according to the Constitution's framework, particularly the seventh schedule. While the centre collects more mobile taxes like as income taxes, customs, central excise, and service tax, the states collect taxes on land, goods trading, roads, automobiles, and liquor, among other things. During the period of 1973-1974, the government aimed at increasing the tax revenue (tax- GDP ratio) in the coming years and therefore in the graph above, it can be observed the same has seen a rise, since 1974. In 1992, when the reform policies were being incorporated in the Indian Economy, emphasis was laid on increasing direct taxes steadily, as within the Indian economy contribution of Indirect tax to the revenue-

taxes on goods and services was greater than that of direct taxes (taxes on income, profits and capital gains).

2008 saw a significant growth in the collection of taxes on income, profits and capital gains which contributed to the tax revenue as well during the Global financial crisis.

In India, contribution of direct tax (here considering taxes on income, profits and capital gains) to the tax revenue is lower than the contribution of indirect tax because almost 60% of our people live in villages, where they rely on agriculture for revenue that is not taxable and otherwise have a relatively low income and hence do not pay taxes. Furthermore, even the citizens who live in cities have a significant amount of income that is not taxable. Lastly a big portion of the population is under the age of 18 and therefore they are not entitled to file tax returns.

The decade of 1970s was unsettling for India in terms of inflation rates. The highest inflation during this period was recorded in 1974, not only due to the first global oil price shock but also because of the poor agriculture produce. At an inflation rate of 28.59%, the tax revenue was merely 8.18% of the GDP as during this timeframe, the country was focusing on widening its tax revenue base. At this rate, taxes on income, profits and capital gains accounted for 21.03% of the revenue whereas taxes on goods and services reported 44.07% of the revenue.

Only 2 years after such high inflation, the country experienced negative inflation (-7.63%) in 1976 because of the national emergency which lasted for 21 months. Around this time the tax revenue existed 9.18% but the effect was observed in the year after wherein the revenue dropped to 8.59% and similar pattern was observed with Taxes on income, profits and capital gains and taxes on goods and services where their share in the total revenue declined.

After the emergency was lifted, the inflation rates accelerated quickly from a negative rate to a strong 8.30%.

The national emergency was followed by the second oil price shock and the period of 1979-1981 saw similar patterns in the surge of inflation rates as with the oil price shock, agricultural output declined which was similar to the situation that the economy faced during the first price shock. During this time, inflation reached highest to 13.11% and the tax revenue followed the pattern by increasing itself to 9.68%.

After 1981, the Indian economy endured fluctuations in its inflation rates but there was no sudden or unusual increase in the rates. During the same period tax revenue was gradually increasing in terms of % of the GDP and while Taxes on income, profits and capital gains raised, collection of taxes on goods and services slowed.

In 1991, when the economic reforms in India were launched in India, inflation rates rose to 13.87%. During this period tax revenue existed at 10.17%; taxes on income, profits and capital gains accounted for 17.25% of the revenue and taxes on goods and services contributed to 34.48% of the revenue. After the implementation of the reforms, inflation in the country fluctuated quite frequently but there was no pit situation that required government intervention or attention. As the inflation rates were fluctuation, the tax revenue were also swinging along, but taxes on income, profits and capital gains so a steady rise in its participation in the tax revenue. Taxes on goods and services on the other hand saw a slow fall in its percentage contribution to the revenue. A reason for this can be considered that as products from foreign markets (imports) were easily available in the country, at a comparatively lesser price and domestic products faced competition from international markets, the demand for domestic goods and services fell which allowed the people to disengage from paying for goods and services or the taxes levied on commodities may have been reduced to make domestic products more attractive and that would have contributed to a low percentage of revenue for taxes on goods and services.

During the global financial crisis of 2008, inflation stood at 8.34% and it accelerated for the next 2 years. Tax revenue was highest during this period as it ranged from 10.97% to 12.10%. Income tax stood at 45.22% of the revenue and this was a result of gradual increase in the collection of the tax and taxes on goods and services accounted for 26.26%.

In 2013 the economic growth slowed and inflation, which was low in India since 2008, experienced a spike a stood at 11.06%. Tax revenue also increased during this period as a result to the rise in Inflation.

During 2017, when Goods and Services Tax was imposed in India, inflation did not observe much of a difference and during this period the level of inflation in India was consistent at around 3-4%, but Taxes on goods and services saw a rise from 32.93% to 37.34%.

Currently due to the Global pandemic, inflation rate in India raised from 3.72% to 6.62%. As tax revenue has been on a rise, based on the current situation, it may rise further but not at a greater rate as income tax's contribution may experience a fall and the taxes on goods and services may not be sufficient in expediting the tax revenue.

On monitoring trends in both the countries based on available data, it can be understood that when there is an increase in the inflation rates, the contribution of tax revenue to GDP also increases, but better and greater results can be observed during the years which follow the year that experiences unusual inflation and allows the inflation to decrease and settle, as

implementation of a higher tax rate takes time, and the true effect can only be observed when the consumers/citizens pay their taxes according to the risen rate. In other words this can be understood by explaining that in order to control the inflation of 1974, the Australian government had imposed higher level of tax rates, and when the increased tax rates were levied upon the citizens, the taxpayers had to pay higher amount of taxes until the rates were reduced again. Thus, even though 1974 experienced surge in tax revenue, the increase in 1975 was more as compared to the previous year as higher tax rates were observed consistently. Collection of taxes on goods and services experienced a fall as higher tax imposition on the commodities would make them more expensive, and the consumers will refrain themselves from purchasing expensive goods and services as even their disposable incomes experience a fall due to the levying of higher taxes on income, profits and capital gains. This perception can be used to understand all the similar trends in the Australian economy experienced during the other periods of inflation.

For the Indian economy, the analysis tends to be a bit different because when the economy was experiencing fluctuations in its inflation rate, the country was also trying to widen its revenue collection through the means of tax revenue and therefore the tax rates not only had to act as a fiscal policy tool, but also had to be altered to facilitate overall economic development. Once the trend in tax revenues started growing at a stable, similar trend in increase in tax revenue with increase in inflation rate was observed as compared to the Australian economy. The impact and contribution on taxes on incomes, profits and capital gains in India was quite weak as compared to Australia, due to the population composition in India, whereas the impact and role of taxes on goods and services as a part of tax revenue in India was greater as compared to Australia, because in India not everyone might be eligible to file income taxes, but consumption of goods and services is inevitable and thus the population of 136.64 crore citizens in some way or another pay the tax for the goods and services that they consume or utilise and therefore the contribution of taxes on goods and services account for the greater portion of the revenue.

In Australia the linear relationship between Inflation (consumer prices) and Tax revenue (% of GDP) exists at **-0.420500339** wherein the time period considered is from 1974 to 2018. This establishes that a moderate negative linear relationship exists between these two variables. Negative linear relationship means that both the variables are inversely related i.e. as one variable increases in its values, the other variable decreases. Such condition is favourable as the increase in inflation can be controlled by increasing the taxes and the surge in tax revenue due to the increase in taxes will help in deaccelerating the inflation rate.

When only the years where the Australian economy faced high fluctuations in its inflation rates are considered (1974,1980,1982,1984,1991,1997,2000)and because of the volatile conditions the involvement of the government for the betterment of the economy was essential, the coefficient of correlation between Inflation (consumer prices) and Tax revenue (% of GDP) exists at **-0.7357948**. (The years preceding and succeeding the turbulent time period were also taken into consideration for this correlation). As compared to the pervious time frame, when these specific years are considered, a stronger negative relationship between the two variables can be observed.

To get a better and in-depth knowledge, correlation between Inflation-Taxes on income, profits and capital gains (% of tax revenue) and Inflation-Taxes on goods and services (% of tax revenue) has been measured as well which exists at **-0.5136187** and **-0.115524** respectively. The correlation between Inflation and Taxes on income, profits and capital gains represent a moderate negative relationship whereas the correlation between Inflation and Taxes on goods and services show a weak negative linear relationship. The Australian economy has always been more focused on strengthening the income tax and the same tax constitutes majority of the tax revenue. Only since 2000, the focus has been shifted to widening the base for taxes on goods and services and thus this part of the tax revenue seems to be weakly associated with inflation as compared to the direct tax.

In India the linear relationship between Inflation (consumer prices) and Tax revenue (% of GDP) exists at **-0.1563832** wherein the time period considered is from 1974 to 2018. The coefficient of correlation reflects that a weak negative linear relationship exists between Inflation rate and Tax revenue in India. The inflation rates in India have always experienced a great degree of fluctuation and as the economy is a developing one, slight changes or external stimulus provokes the inflation rates to move very rapidly. Tax revenue in India on the other hand, has always had a lower stance i.e. the presence of tax revenue in the GDP of the country has been weak (currently existing at 11.97). Due to tight conditions, even though taxes do have a reducing effect on inflation in India, the influence is not very strong.

When only the years where the India economy faced exceptionally high fluctuations in its inflation rates are considered (1974, 1976, 1977, 1980, 1991, 2008, 2013, 2017) wherein the government authority has to intervene, the coefficient of correlation between Inflation (consumer prices) and Tax revenue (% of GDP) exists at **-0.2260696**. (The years preceding and succeeding the turbulent time period were also taken into consideration for this correlation). Even though correlation shows a slight increase as specific years of extreme inflation rates are taken into account , the coefficient of correlation reflects a weak negative linear relationship.

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When correlation between Inflation-Taxes on income, profits and capital gains (% of tax revenue) and Inflation-Taxes on goods and services (% of tax revenue) was measured the coefficient of correlation existed at **-0.1458815** and **0.02642564** respectively. Correlation between Inflation and Taxes on income, profits and capital gains depict a negative and weak linear relationship whereas correlation between Inflation and Taxes on goods and services illustrate a weak, positive linear relationship. This means that the relationship between inflation and taxes on goods and services indicates that when the value of one variable increases, the other variable also increases in variable. As mentioned earlier, in India taxes on income are difficult to collect due to the income bracket in which a part of the employed population works income earned is not taxable , vast part of the population are not eligible to pay taxes etc. Owing to such limitations the effect of taxes on income, profits and capital gains is not very significant, but it is highly unlikely that the consumers would stop consumption all together because of imposition of taxes. Therefore to work on inflation in India, the tax revenue is more dependent upon taxes on goods and services because as the rate fluctuates suddenly in the Indian economy, the citizens are unable to plot gradual increase in price and undeniably consumption has to take place.

IV. CONCLUSION

The central aim of the paper was to establish and understand the relationship that exists between taxes through tax revenue and inflation, and for a more comprehensive approach comparison between the economies of two countries was carried out – India and Australia.

When an economy expands as a result of greater spending but not as a result of increased production of goods and services, inflation occurs. Prices rise as a result, and the money within the economy is worth less than it was previously. To a certain extent inflation is beneficial for the economy because when the economy isn't operating at full capacity, it means that there's unsold labour or resources and in such situation inflation can theoretically assist boost output because more money means higher spending, which corresponds to more aggregated demand. As a result of increased demand, more production is required to supply that need. But when inflation rate surpasses an acceptable level, it becomes necessary to bring it down because otherwise at high level of inflation the lower income families may experience regressive conditions as they have fixed/limited income; the cost of borrowings will increase at a greater extent which would make business development difficult and uncertain and competitiveness within the domestic and international markets will suffer as the exports of goods and exercise from the country will slow down due to less price competitiveness. Therefore in such situation,

where the market forces become insufficient in controlling inflation, the government can intervene by imposing higher tax rates.

High taxes will help in reducing the money supply within the economy as individuals will have to pay more tax on their incomes and while purchasing goods and services which will drive them to reduce their spending in one way or another. High tax revenue is a reflection that greater tax rates are being imposed in the economy, and with sufficient tax revenue the government can also engage in working towards social upliftment and after effects of high inflation.

In Australia as well as in India, a negative correlation between tax revenue and inflation is observed which means that when tax revenue increases as a result of increase in tax rates, the inflation rate decreases. The degree of the correlation was moderate to weak and therefore even though a correlation exists, the variable do not have a very significant impact on each other.

Within the Australian economy, the linear relationship was moderate as the tax revenue is a noticeable part of the GDP and taxes on income, profits and capital gains (direct) have a more remarkable impact over the tax revenue as compared to taxes on goods and services (indirect) as income tax has a wider base in the country. In India this situation is reversed, i.e. taxes on goods and services have a greater impact on the tax revenue as compared to the taxes on income, profits and capital gains. As for the Indian economy, the linear relationship was weak owing to the condition that tax revenue as a part of GDP needs to be extended.

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