Benefits and Threats of a Fully Inflation-Indexed Economy

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Abstract

A fully inflation-indexed economy stabilizes economic inter-temporal relationships and offers a set of potential benefits: hedging the economy against inflation; improving the performance of the financial system; helping to lessen the most common housing and economic recessions of developed economies; facilitating demand stimulus policies to overcome economic recessions and pursue full employment; and helping reduce international imbalances. The design, transition and management of an indexed economy present a set of threats and challenges enhanced by the fact there is a lack of experience. Despite the threats, the significant potential benefits should encourage debate and implementation.

Keywords: Inflation, index, indexation, time, money printing, recession, imbalance.

JEL Codes: E20, E31, E50, E60, F40, H30, H60
1. Introduction

Most economists see inflation as economically and socially costly and unpopular (Fischer, 1996), mainly as a result of the experience of the 1970s and 80s with high inflation and frequent economic recessions. Feldstein (1997) considers that inflation has significant adverse consequences including: the distortion of lifetime allocation of consumption; the allocation of spending between housing and other forms of spending; the demand for money; the mix of business investment; or the structure of individual portfolios. These adverse effects ‘justify the sacrifices in employment and output that are generally needed to reduce inflation’ (Feldstein, 1997). Governments have tried to avoid inflation-induced problems adopting a model based on price stability – which most economists and institutions, such as the European Central Bank (ECB), now consider as one of the main goals of economic policy (Friedman, 1968). The majority of developed economies enjoyed a period of economic growth with only a few mild recessions between the mid-1980s and 2007 thanks to price stability. However, the model is unable to avoid financial disturbances when inflation rises and imposes limitations on monetary and fiscal policies that hamper economic recoveries. Price stability has such a status among scholars that mainstream economics does not question its validity despite the obvious weakness of the financial system, high unemployment, poor effectiveness of monetary policies, feebleness of demand stimulus policies, periodical economic recessions and sluggish growth in developed economies since 2007.

However, price stability is not the only way to protect economies from inflation-induced problems and recent works are pointing to the weakness of the present model and proposing alternatives based on inflation-indexed contracts. Shiller et al (2011) point to traditional mortgage contracts such as Fixed or Adjustable Rate Mortgages (FRMs or ARMs) as responsible for the fragility of the financial system and propose a ‘continuous workout’ mortgage. Barrull (2012) highlights the role of non-inflation indexed mortgages as the main catalyst of housing and economic recessions during recent decades in the USA and as being responsible for the odd
relationship between inflation and unemployment since the late 1960s, proposing inflation-indexed contracts as a solution.

Although many economists such as Fischer and Modigliani (1978) or Bernanke (2006) recognize that the problem of inflation could be reduced by indexing payments to the price level, governments seem to avoid this solution. In fact, many countries that adopted different levels of indexing during high-inflation periods, such as Brazil, Israel or the USA, abandoned indexing when inflation receded (Bernanke, 2006). This fact and the mixed experiences in partially indexed economies, such as Brazil, Israel, Iceland or Chile, raise important questions about the suitability of indexation. However, the preference for non-indexed contracts is still a puzzle (Shiller, 1997). Economists have pointed to many causes – such as money illusion (Shiller, 1997; Brunnermeier and Julliard, 2008); legal constraints (McCulloch, 1980); nominal negative amortizations (Irwin, 1996); supply-side or traders reluctance (Weiner, 1983; Stiglitz, 1998); or the lack of a secondary market (Wiener, 1983). Barrull and Dorsé (2011) also point to a ‘stag hunt’ game situation where lenders prefer non-indexed contracts unless indexed mortgages are the bulk of the market. As a result, the transition to an indexed economy will not succeed unless the main economic agents coordinate and indexed contracts become predominant. The success of the monetary authorities in reducing inflation volatility, the mixed experiences in partially indexed economies, the problems related to inflation measurement or the selection of a benchmark index, and the fact that indexation is seen as a model for economies that are unable to control inflation or have tax collection problems might also have contributed to the relative absence of indexing.

Economic theory also shows other problems in indexed contracts. Fischer (1982) indicates that the main adverse consequence of indexation is that it might be inflationary and points to the difficulties in adjusting to a shock that requires changes in relative prices and the aggregate price level. There is also a wide consensus about the lack of a long-run trade off between inflation and unemployment thanks to the theoretical works of Phelps (1967) and Friedman (1968) and further empirical observations. Consequently, economists prefer to
avoid inflation rather than hedging against it because they see the problems of inflation and no long-run benefit in policies that can cause inflation.

2. A fully indexed economy

This paper considers that in a fully indexed economy all main contracts such as wages, rents, mortgages, bonds or bank deposits would be indexed to inflation or the price level. All financial instruments except cash would be indexed and markets would rely on real interest rates rather than nominal rates. Governments would tax real rather than nominal returns. A non-indexed economy refers to an economy that has no contracts indexed to inflation. A fully indexed economy offers significant benefits thanks to a proper economic inter-temporal relationship but also poses many threats and challenges.

2.1 The economic inter-temporal relationship

Some economic agents prefer to delay their decisions on investment or consumption and save their money. Those agents agree to save because they believe their savings will hold, at least, their purchasing power in the future. Simultaneously, savings enable borrowers to decide about the current allocation of resources. The savings-investment process displays the inter-temporal economic preferences and its failure may lead to economic recessions.

Non-indexed contracts are based on expected inflation, so unexpected inflation fluctuations modify the value of assets with nominal cash payments and the future purchasing power of savers. In a non-indexed economy, inflation fluctuations alter the inter-temporal relationships. When inflation rises, non-indexed loans suffer the 'tilt effect' (Lessard and Modigliani, 1975). Borrowers need to anticipate cash flows to present days and non-indexed contracts such as bonds or mortgages lose value, so savers and lenders lose their future purchasing power. The alteration of the inter-temporal relationships in a non-indexed economy has significant
implications for economic performance and can cause misalignments in financial markets, the banking system and the entire economy. In fact, increases in inflation have preceded most economic recessions in the USA since the 1960s (Barrull, 2012). Consequently, governments need to preserve price stability to achieve long-term economic growth, although by maintaining stability they restrict monetary and fiscal policies. For example, an easing monetary policy can stimulate inflation, so central banks can only lower interest rates providing they do not encourage inflation. Similarly, governments need to borrow if they want to apply demand stimulus measures, otherwise inflation will be encouraged. Therefore, fiscal policies are restricted by the government’s capacity to borrow.

In contrast, in a fully indexed economy, inflation fluctuations do not alter the inter-temporal relationships and only show the current tension between supply and demand. When inflation rises, borrowers do not need to anticipate cash flows because indexed contracts do not suffer the tilt effect and savers or lenders do not lose their future purchasing power (unless prices fail to correctly reflect the scarcity of future resources). Consequently, financial markets can perform better and economic authorities can use monetary and fiscal policies to stimulate the economy or restore economic imbalances. If demand stimulus measures cause inflation, the potential negative consequences would only concern current economic conditions and not the future.

2.2 Main benefits of an indexed economy

Economists such as Fischer and Modigliani (1978) highlighted the benefits of indexation in protecting the economy from unexpected increases in inflation; but its potential benefits go further thanks to stability in economic inter-temporal relationships. This paper focuses on three significant benefits: improves the financial system performance; facilitates demand stimulus policies; and reduces international imbalances.
2.2.1 Financial system

In a non-indexed economy, savers hedge against the negative consequences of inflation by adjusting nominal interest rates to the sum of real interest rates and expected future inflation (Fisher, 1930). Non-indexed contracts cannot protect financial markets from unexpected inflation. Unexpected increases in inflation harm savers or lenders while unexpected declines harm borrowers (Fischer and Modigliani, 1978), particularly if they have long-term contracts. Moreover, in a fiat money economy, inflation has no ceiling or a long-term trend and this may introduce high levels of uncertainty and so fuel volatility and risk premiums. To diminish these uncertainties, many governments announce long-term inflation targets although they are unable to avoid the negative consequences of uncertainty and short-term inflation volatility.

In contrast, inflation indexed contracts hedge both lenders and borrowers from unexpected inflation. Risk premiums on uncertainty should decline because lenders and borrowers do not carry the risk of unexpected changes in future price levels. Financial markets should work with real interest rates that have a lower volatility than nominal rates and a long-term trend that facilitates long-term investments. Real interest rates are lower than nominal rates, and consequently, initial loan payments on price level indexed contracts are also lower. Since lenders take into account the relationship between loan payments and income to facilitate credit, lower initial loan payments imply more borrowing and investment capacity and more ability to adapt the temporal needs of saving, investment and consumption.

An indexed economy also has potential benefits for the banking and housing systems. When inflation rises in a non-indexed economy, granted loan amounts fall and adjustable rate mortgages loan payments increase due to the tilt of the real stream of loan payments to the early years of the loan, known as the tilt effect (Lessard and Modigliani, 1975). Residential investment activity and housing prices tend to fall and lenders suffer loses due to higher interest rates, increasing defaults (mainly ARM borrowers) and declining prices (Barrull, 2012). The strong
relationship between the financial system and economic recessions (Allen and Rogoff, 2010) facilitates the contagion of the recession to other economic activities. Investors and banks may also suffer losses if they own long-term bonds or treasuries because these bonds lose real value\(^1\). In contrast, price-level indexed mortgages do not cause the tilt effect, thereby avoiding the negative influence on the housing and financial markets and the beginning of this type of economic recession. Moreover, the long-term trend of real interest rates also helps mitigate the negative effects of real interest rate volatility.

### 2.2.2 Demand stimulus

Economic authorities mainly stimulate the economy with monetary and fiscal policies. In a non-indexed economy, since economies need to pursue price stability, monetary policy must avoid increases in inflation, and this constraint may be restrictive in a situation of low economic growth and a higher than expected inflation. Similarly, governments need to borrow to boost spending and avoid increases in inflation, thereby increasing state debt. If they are too indebted or cannot borrow, they must reduce spending – thereby causing or deepening an economic recession. Governments could also fund spending by printing money; but most economists criticize this measure because printing money can raise inflation and damage confidence in the economic system. The increase in prices due to money printing implies an ‘inflation tax’ that harms private demand, holders of cash and fixed rate contracts. Inflation is seen as a tax because the government obtains goods and services while increasing prices diminish the purchasing power of households. However, holders of cash and fixed nominal rate contracts such as bonds may be the most damaged because they own rights to get nominal payments that lose real value. The printing of money also raises uncertainty about the future evolution of prices. Higher inflation volatility hurts the whole economy because it increases interest rates and risk premiums: thereby harming the

\(^{1}\) An economic recession preceded by a rise in inflation and a housing recession is the most common pattern of economic recession in developed economies.
housing market (prices and activity), borrowers with ARMs due to the tilt effect, and the banking system through various channels.

In an economy where all contracts are indexed to the price level, inflation would hurt neither long-run private investment, nor long-run private consumption, nor the holders of bank deposits, bonds and mortgages. This is because real purchasing power and the real value of assets would be maintained, regardless of the inflation level. However, holders of cash (in coins or paper money) and short-run private demand would still be harmed. Cash would lose its purchasing power and demand for cash would decrease due to the higher cost of holding it – producing the ‘shoe-leather’ costs of inflation. This cost is almost irrelevant for the economy because most holders would have cash during a short period of time (Fischer and Modigliani, 1978). Private demand would see a real income fall in the short run due to the lag of indexation in recognizing the price increases; but households and companies would keep their real purchasing power in the long-run because their income (wages, rents, interest, etc.) would be indexed to the price level. Governments can therefore consider printing money to stimulate the economy because it would only work as a short-run tax.

As a fiscal stimulus, printing money has some advantages over other measures. Governments can increase demand without collecting new taxes that cut the disposable income of households and companies; without making new borrowings that burden future generations; and without damaging private investment through the ‘crowding out’ effect. Inflation can neutralize an increase in public demand by subtracting private demand; but inflation is not a necessary consequence if the economy is not in equilibrium due to a lack of demand or idle capacity. In that case, an increase in demand should increase output with a negligible (or even without an) increase in inflation. A stimulus may generate inflation if it is excessive or too focused on certain economic activities (which will be like a tax or a transfer of rents) but will also increase economic output. Only if the economy is at full capacity, then printing money would be like a tax that will not increase economic output – or increase output slightly if inflation unexpectedly accelerates. In that case, governments should consider reducing the printing of money. In summary, if
printing money is effective (when there is a lack of demand or idle capacity), output will increase; if it is not effective (when there is full employment or capacity), inflation may have negative consequences similar to a new tax for the economy.

The fact that printing money in an indexed economy works as a tax that does not reduce the disposable income of households and companies, or increase public debt, gives governments an excellent tool to fight against economic recessions by closing the output gap or reducing misalignments between demand and supply. Printing money can also help to pursue full employment if combined with other economic policies. In an indexed economy, monetary policy can become more flexible and focused on pursuing objectives such as economic growth and full employment because it does not suffer the severe limitation of needing to pursue primarily the objective of price stability\(^2\). Monetary policy can also be used to help the financial system reduce risk premiums on public debt. Governments can reduce their borrowings, reducing real rates and the negative consequences of the ‘crowding out’ effect.

2.2.3 The current account balance and the currency

One of the main problems in equilibrating trade imbalances is that economies with trade deficits need to devalue their currency, which can boost inflation and nominal interest rates and raise problems in capital markets, mainly with foreign capital. In contrast, economies with trade surpluses see their economies shrink due to falling exports.

An indexed economy protects economies that devalue their currency, as all economic agents are hedged against inflation. Devaluation should not influence real interest rates, maintaining stability in financial markets and investment. Devaluation also protects foreign asset holders since they keep their purchasing power in products, services or the assets of the economy that has devalued its

\(^2\) The paper is not claiming for high inflation or against price stability. It suggests it has to be a secondary aim after economic growth and full employment.
currency – thereby offering stability to the economic system. Even if the devaluation caused a flight of capital, governments could lessen the negative consequences by printing money and stimulating internal demand.

Indexed economies can also help economies with trade surpluses. If the equilibration of a trade balance causes a fall in foreign demand, governments can stimulate internal demand without raising taxes or increasing debt by printing money. A gradual process can help restore the current account balances without hurting exporters or importers.

2.3 Main threats

Despite the significant potential benefits of a fully indexed economy, most economies and economists are reluctant to apply indexing. The indexation of the economy implies significant challenges in its design, implementation and management. This paper focuses on the main challenges without pretending to be exhaustive.

The first challenge is linked to the difficulties of designing and managing an economic system without previous experience in fully indexed economies. However, experience in partially indexed economies like Iceland, Chile or Israel, both the positive and negative aspects, can help overcome the main obstacles. Economic agents such as governments, monetary authorities, the banking system, companies and households need to proceed in a different way than in a non-indexed economy and trial and error is needed until reaching a desirable situation.

The main challenges are related to dealing with inflation and printing money. The indexation of the economy can facilitate high inflation levels or can lead to hyperinflation. This is because of the government’s capacity to print money, the automatic increases in wages – and therefore in prices and potential difficulties.

\[^3\] Obviously, foreign asset holders are not hedged against currency devaluation. A non-indexed economy can hurt them, not only because of the devaluation but also because increases in inflation can deflate the price of housing and bonds.
adjusting an indexed economy following a change in relative prices (Fischer, 1982). Even if indexation of the main contracts provides a hedge for economic agents in the long-run, high inflation levels or an accelerated inflation can alter market performance in the short run. Governments must decide if they accept high inflation levels temporarily or permanently and which disinflation policies to pursue if they prefer to lower inflation levels. Not accepting temporary high inflation levels can lead to higher unemployment and weaker demand. The permanent acceptation of high inflation levels can lead to market misalignments and shoe-leather and menu costs. A long term flexible inflation target and a maximum inflation threshold can help overcome these problems. Despite the temporary problems and negative consequences of high inflation, the experience of disinflation in highly-indexed economies is moderately positive. Chile, a highly indexed economy, was able to reduce its inflation levels during the 1990s with high economic growth rates. Iceland also reduced high inflation levels at the beginning of the 1980s with relatively low costs in terms of output and unemployment (Andersen and Guðmundsson, 1998).

The capacity to print money also implies a major challenge for economies because it can have a strong influence on fiscal and monetary policies. Money printing needs a strong coordination of various fiscal and monetary policies. It can work as a tax and have significant economic and social consequences in changing preferences or transferring rents. Governments should explain their money printing policy to internal and foreign markets because this policy may have different consequences if used massively or moderately, temporarily or permanently, if used to stimulate internal demand, to buy foreign products or assets, or to cancel public debt. Money printing can be harmful in countries with high corruption levels; it can stimulate poor resource allocation with politicians investing in unnecessary projects; it can be wrongly seen as a substitute for productivity gains and so harm long-run economic growth; it can lead to hyperinflation if abused by economic authorities and it can destroy confidence in a currency if governments use it inappropriately.
One of the main economic decisions a government must make is about the level of indexation in the economy. The indexation of long-term financial contracts such as mortgages or bonds seems positive for the economy while the indexation of short-term contracts or non-financial contracts may not be as necessary. The indexation of wages gives stability to the workers’ purchasing power and borrowing capacity; but introduces market rigidities that may lead to an increase in unemployment, mainly if workers do not accept changes in real wages. The indexation of wages is controversial and some economists dismiss it or prefer partial indexation (Gray, 1976). Flexible labor markets and lags in indexations may help overcome these problems but economic agents should ponder the need for wage indexation, given that most workers have kept or increased their long-run real income in developed economies and that workers and companies renegotiate wages periodically while taking inflation into account. Economies also need to decide about the updating of indexes. Immediate updates can harm shock adjustments that require changes in relative prices (Fischer, 1982) while long and slow adjustments can harm the purchasing power when inflation is high.

3. Conclusions

A non-indexed economy needs to pursue a policy of price stability because inflation fluctuations alter the economic inter-temporal relationships and harm financial and economic systems. In contrast, a fully indexed economy stabilizes economic inter-temporal relationships, offering significant potential benefits for financial markets, while helping to prevent economic recessions and imbalances. However, a lack of experience and governmental capacity to print money also imply significant threats. Nevertheless, while the benefits are structural, the main threats are related to its design, implementation and management. Despite the significant challenges, the potential benefits are so great that transition to an indexed economy must be considered. This paper has focused on key benefits and threats of indexation but there are still many open questions and more research is needed to improve our knowledge on the issue.
References


