Intelligence MEMOS

From: Charles A.E. Goodhart, M. Udara Peiris, Dimitrios P. Tsomocos and Xuan Wang

To: Canadians Concerned About Inflation

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Re: **Corporate Legacy Debt, Inflation, and the Efficacy of Monetary Policy**

Corporate debt in Canada has been increasing, alongside other advanced and emerging economies, since 2007, and the pandemic has led to a further sharp increase (See Figure).

Against this backdrop, inflation has risen: Canada's March annual rate hit a 30-year high of 6.7 percent.

In a recent paper, we argue that high corporate indebtedness poses a challenge for central bankers looking to tighten monetary policy to control inflation because of what's called the income effect of corporate debt.

Start with aggregate demand for labour. There is both a substitution and an income effect. The substitution effect comes from the fact that interest rate hikes increase the cost of financing, which leads to more expensive labour, in particular because these costs must sometimes be paid before business revenue is received. This decreases labour demand on the part of businesses. Less labour demand leads to less aggregate demand from households on goods and services, generating lower inflation.

However, to the extent the fixed cost of existing corporate debt is already high, and firms are able to spread this fixed cost over a larger production scale, demand for labour might actually increase, offsetting some of the substitution effect. This is the income effect.

On aggregate supply of labour, the monetary contraction reduces both real wages and the market price of corporate bonds, the latter leading to a deterioration of household wealth. This deterioration leads to lower aggregate demand and, therefore, lower inflation.

However, bond prices fall by less than the drop in real wages in a high debt scenario compared with a low debt scenario. This is because bonds' long rate increases by less than the short rate when there is a higher quantity of debt in the market, with the term structure becoming flatter at the long end or even inverted. Therefore, the negative impact on wealth in the high debt scenario is less severe than in the low debt scenario, which results in less of an increase in labour supply. This is the income effect on aggregate supply.

Both income effects on aggregate demand and aggregate supply reduce the impact tighter monetary policy has on inflation through the effect of debt on labour.

For central bankers facing high inflation, a high existing debt scenario forces a re-think of future monetary policy decisions. At normal debt levels, the traditional Taylor principle holds: raising the policy rate lowers current inflation. However, as we get to higher and higher debt levels, we get smaller and smaller drops in prices, meaning that monetary policy becomes less effective in controlling inflation. This is because, via the income effect through corporate debt, as we have argued, the aggregate demand curve for labour shifts less to the left, and the aggregate supply curve for labour becomes flatter. Therefore, although output falls responsively, prices and inflation only respond mildly.

In our paper, we test this theory in an economic model where we simulate the responses of a high debt economy to a contractionary monetary policy shock. We demonstrate that the monetary authority faces a much more difficult trade-off between inflation stabilization and output stabilization when there is a large volume of corporate debt in the economy with minimal chances of imminent large-scale bankruptcies, which seems likely with central bankers taking a cautious approach to hiking rates.

Under these circumstances, our model confirms the above findings and suggests that monetary policy will not be effective in reducing inflation gently towards a soft landing. This means that central banks ultimately have to choose between generating a recession, with significant bankruptcies, or accepting continuing stagflation.

This is, obviously, a policy conundrum for the current post-crisis scenario in Canada. Is there anything to be done? If monetary policy is weakened due to high corporate debt, some other sector, most likely housing, has to take a greater weight to bring inflation back to target. Since first-time homebuyers bear the brunt of housing market corrections, tightening up lending criteria such as loan-to-income and debt service ratios now becomes all the more imperative.

Second, the inversion or the flattening at the long end of the yield curve is not helpful. With the caveat that there is debate as to how much impact quantitative easing had in lowering long-term yields, it is critical for he Bank to get quantitative tightening right in order to lift that long end.

A difficult road lies ahead for Canada's central bank.

Table 1: Indebtedness of Non-financial Corporations

Advanced Economies						
	US	EU*	SWE	**CAN**	UK	JPN
Dec-07	70	93.3	125.2	**81.7**	82.1	99.5
Dec-18	75.2	106.2	158.8	**114.3**	76.1	99
Dec-20	84.6	115.1	175.3	**132.4**	80	115.6
Emerging Economies						
	CHN	KOR	HK	CHL	BRA	TUR
Dec-07	94.3	84.8	124	65.2	29.7	29.6
Dec-18	149.1	95.6	219.5	100.2	46.3	68.1
Dec-20	160.7	111.1	246.8	115.9	54	72.1

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**Eurozone.*

Source: BIS, Goodhart and Pradhan (2020). Numbers express non-financial corporate debt as % of GDP.