

## **The Economic Crisis: Ideas from Bernard Lonergan**

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### **Abstract**

Lonergan's economic theory of the dynamics of an economy in a cycle of innovative growth is applied to the current economic and financial crisis. His attention to the functional distinction between consumption and investment, the need to understand profit variation in macroeconomic dynamics, and his explanation of price and profit variation in innovative growth shows how failure to adapt to changes can lead to business cycle crises and recessions or depressions. The paper reviews some economic data and analyses of the current crisis noting the role of deregulation and globalization as well as the shift from hedging to speculation in a boom. Concrete remedies for the crisis depend on the choices made, in particular situations, by people, corporations, and governments. The paper offers concrete suggestions for remedies in each of these arenas.

## **The Economic Crisis: Ideas From Bernard Lonergan**

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### Introduction

Bernard Lonergan's explanation of the dynamics of an economy in the cycle of innovative growth can help us to understand the current economic and financial crisis. This paper considers some relevant data and analyses through that prism. Lonergan's theories build on the work of Hayek and Schumpeter as well as others of the Austrian school and are, in some ways, consistent with recent work on innovative growth by Finn Kydland, Edward Prescott, and Paul Romer.<sup>1</sup> Like

Keynesian economists, Lonergan sees the unresolved financial hazards present in growth dynamics. He discerns that the economy could move in a pure cycle of growth if people truly understood the process and adapted to it. Economies, he contends, could then avoid business cycle booms and busts. According to Lonergan, what is missing is an understanding of profit variations in innovative growth and a willingness to adapt to such changes. For example, at one point expansions will reach a maximum and the extraordinary profits that are the returns to innovation will fall towards normal levels. For Lonergan, "normal" profits still include a return to business managers, as well as to interest on borrowed capital, and to dividends for shareholders.<sup>2</sup>

### Thinking About Macroeconomic Dynamics

The economy is most simply understood as a circular flow of payments in production, exchange, and finance; that is, in terms of (1) the outlays and incomes of people as producers, (2) people's market spending for consumption and their saving for the future, and (3) the borrowing and lending of people for investment and consumption either directly or indirectly through financial institutions and government.<sup>3</sup> Although economists generally distinguish between producers, consumers, governments, and foreign trade in the circular flow, less attention is paid to the distinct but related effects of people's

investment and consumption spending in the economy.<sup>4</sup> In fact, because consumption is immediate and accounts for about three-quarters of all spending, producers and governments may not attend broadly enough to investment for future needs.

Although in theory the circular flow of payments can be stationary or unchanging, in practice the economy is dynamic, changes over time, and has become in many ways globally connected. As well, the payment schemes are interdependent and not always transparent. Their continuity, however, depends on people having some understanding of the process and coordinating their economic activities accordingly.<sup>5</sup>

Production and exchange in the real economy of goods and services depend on the flows of money and credit for payments to and from people who are both producers and consumers. When innovations are being put in place, new credit is needed to fund the new enterprise. Economists call for a neutral money supply; that is, a supply of money and credit that increases as closely as possible with growth in the real economy of goods and services. Yet a key question remains, How is the increase of money and credit for economic growth to be managed in free economies? In many countries, central banks are the institutions that are given this national responsibility. But in an increasingly global economy, international banking institutions and

financial markets have also become involved as sources of money and credit.

When the increases in money and credit are excessive or insufficient, payment schemes break down. The world financial system seizes up. But the financial breakdown usually follows a peak in real economic production. Witness the peak in the recent expansion that occurred in late 2006, when investment in housing peaked in the U.S.A. and then fell sharply in 2007.<sup>6</sup> Clearly, the peak is reached when the market response to a stage of innovative economic growth reaches its limit.<sup>7</sup>

During the first period of any major innovation that becomes generalized (such as computers), there are extraordinary profits for businesses that invest and innovate successfully. These extraordinary (as opposed to normal) profits emerge with an economic expansion.<sup>8</sup> When the extraordinary profits are reinvested, the advantages of the innovation can be made available to more people. Moreover, the reinvestment of profits ensures that growth in the whole economy can create sufficient jobs to offset the employment and output effects of the rise in productivity. Thus innovation leads to a rise in productivity by producing more or better goods and services while using fewer resources, including human resources.

Why do the extraordinary profits in an expansion come to an end? Economists know that the rewards to innovation dissipate as production approaches the limits of the market. They refer to the “diminishing returns” of an economy as it reaches the limit of what can be produced with the land, or labour, or new ideas available in a given period.

When investment that extends innovation in producer goods approaches a limit, and profits move towards normal levels, income distribution adjusts so that income differences across the population will diminish. The new capital or producer goods – that is, the new plant, new equipment, and newly skilled people – will be rapidly used to produce consumer goods, thus maximizing overall profits and meeting the demand that comes with fuller employment and more equitable income shares.<sup>9</sup>

Furthermore, if everyone understands correctly the temporary nature of extraordinary profits that follow successful innovation in production, income distribution will adjust. The production of related consumer goods and services can then be fully extended. Moreover, the larger economy’s demand for producer or capital goods and services will prevent an absolute downturn in their output. However, if the extraordinary profit from the new production of capital goods and services does not return to normal as an expansion matures, the

growth in the production of consumer goods and services will not take over sufficiently to avoid a downturn. The search for high profits continues, and income distribution will not adjust sufficiently to increase consumer demand.<sup>10</sup> Adding to capital and consumer goods thus requires different kinds of behaviour. The investment of savings, new credit, and profits will add to new producer or capital goods and services. Adding to the production of new consumer goods and services requires a demand from people whose incomes are more fully consumed.

A clear example of innovative growth can be seen in newly industrializing countries. Today, we in North America and Europe are importing more from China, India, and Brazil. These new industrializers sell us manufactured goods, which benefit us when they are cheaper. Such transfers will continue until the capital infrastructure, building, and human capital investment are sufficient in those countries. At that point, their wage costs will rise, and their own people will be able to afford domestically produced consumer products. We lived through a similar process during the postwar re-industrialization of Japan. Eventually, Japanese wages increased, and it was no longer profitable for Japan to produce basic consumer goods for export.

## What Led to Our World Economic Crisis?

Let us turn now to our current crisis. In our lives we try to foresee what is going to happen; we prepare for it by trying to “hedge” against negative outcomes. For example, we make sure that there is enough food until the next payday, or sufficient money for school fees. Hedging also refers to what people and corporations do in financial institutions and markets. For instance, if a company has to buy or sell foreign currency when selling its products abroad, it can hedge against changes in the currency’s value by buying or selling the currency in the futures market at the currency’s expected future price now. When buying a currency, the company will be ahead if the price in the future turns out to be higher, but will lose out if the currency’s spot price is lower when the company needs it. Thus hedging can smooth markets over time as supply, demand, and price all interact in markets such as the futures markets.

Innovation in the economy includes innovation in the area of finance. Many new hedging possibilities have been developed since the 1970s, when world currency exchange rates began to vary with supply and demand in world currency markets. Before the 1970s, the world financial system was the one set up at the 1944 Bretton Woods Conference by the Allies of World War II. There, the U.S.A. became the world banker by agreeing to sell gold at U.S. \$35.00 an ounce.



World currency values were then fixed against the U.S. dollar and gold. Since the 1970s, however, currencies are no longer linked to gold; instead, they vary with people's supply of and demand for a particular currency. Some countries, though, do still link their currency to the U.S. dollar.

No one replaced the United States as world banker in the 1970s. And world financial coordination began to depend on major world economies and world financial institutions, such as the IMF, the World Bank, and the Bank of International Settlements. It is often difficult for the global economy to balance financial flows when there are sudden changes in prices, in the supply and demand for goods and services, or in the exchange rates of currencies. As well, world economic decisions still depend in part on the various policies of the major national governments.

After the 1970s, given the increasingly deregulated financial environments of economies such as the U.S.A. and the U.K., financial innovation and profits could become more important than hedging in world financial markets.<sup>11</sup> Indeed, in some countries, new financial instruments, such as hedge funds, benefited from the climate of deregulation. Take, for example, regulators such as the U.S. Securities and Exchange Commission, which made their corporate regulations voluntary and did not regulate new financial instruments such as

hedge funds.<sup>12</sup> Alan Greenspan, Chairman of the U.S. Federal Reserve or central bank from 1987 to 2006, spoke of his faith in the unregulated global system in which “trillions of dollars of daily cross-border transactions (occur), few of which are publicly recorded,” arguing that deregulation has helped the U.S. to remain the most competitive large economy in the world. Meanwhile, however, European economic leaders recognized at their Lisbon meeting in 2000 that their relatively regulated economies needed to become more competitive.<sup>13</sup>

In international finance, to some degree everyone has depended on the United States to serve as the world economic leader. Between 2002 and 2007, the supply of money and credit in the United States increased six or seven percent per year. Very low central bank borrowing rates made it easy for other banks, corporations, and individuals to borrow; these rates also encouraged flagging economic enterprise. As well, U.S. government policies have tended to increase people’s access to credit, by writing off mortgage interest payments against taxes and by tacitly backing the national mortgage institutions, Fannie Mae and Freddie Mac. Moreover, growth in the U.S. currency has had international effects. Today, the U.S. dollar serves as a world currency and is held as a reserve currency by central bankers in many countries.

As well, world profits were often reinvested in U.S. government bonds, which helped to finance U.S. government deficits and U.S. deficits in the balance of payments. With funds available to be borrowed at such low rates, financiers and bankers realized that there was an international market for U.S. Treasuries<sup>14</sup> and other debt instruments such as mortgages. But by 2004, low interest rates on U.S. government bonds had rendered them a less desirable investment. Nevertheless, the new U.S. mortgage-backed assets or commercial paper became attractive to national and global investors. Mortgage brokers, banks and housing developers saw the possibility of extending the mortgage market by offering mortgages to people with lower incomes. Banks innovated, creating new financial instruments (collateralized debt instruments) that packaged bank assets such as mortgages and other commercial paper. Banks then sold these debt instruments through their traders at a profit to larger banks, to Fannie Mae and Freddie Mac, and to financial institutions around the world.<sup>15</sup> In the beginning, everyone believed in the U.S. housing market, where prices had been rising for many years.

Traditionally, debt has been taken on by banks through their risk managers. In an economic boom, however, when both money supply and profits are rising, stock and bond traders and risk managers have quite different interests. Risk managers want to avoid risky debt, while

traders and senior bankers are interested in the profits from the sale of the packaged debt instruments they hold as assets. In the buildup of the housing boom, banks' risk managers came to be regarded as pariahs who were spoiling the party. Meanwhile, people were using borrowed funds to invest in equity, interest on such debt being much lower than the profit they could make on investments in equities as prices rose in the stock market. Of course, such investment is risky. If stocks lose their value, the principal and the interest on the debt used to buy them must still be repaid.

Why did no one foresee the end of the boom? The Keynesian economist, Hyman P. Minsky, has offered one explanation, the financial instability theory, which says that as an expansion peaks, investors and financial institutions become more complacent about risk.<sup>16</sup> Investors, he contends, begin to move from hedging to speculation. As well, during the recent boom, it seems that some economic models used to foresee economic trends had actually been calibrated on the previous four years – all boom years. Unsurprisingly, the models did not hint that the boom would end.<sup>17</sup>

In his book, "The Age of Turbulence," Alan Greenspan argues that, while the Federal Reserve does try to avoid bubbles that will eventually break, it is impossible to forecast or control stock markets.<sup>18</sup> On the other hand, the IMF's April 2008 World Economic

Outlook argued, diplomatically, that “recent financial developments have fueled the continuing debate about the degree to which central banks should take asset prices (including house prices) into account in setting monetary policy ... especially in economies with more developed mortgage markets where ‘financial accelerator’ effects have become pronounced.”<sup>19</sup> It is also true, however, that the large inflow of foreign capital into the U.S., seeking a stable place to invest, helped to lower interest rates there.<sup>20</sup>

In August 2006, the first failures to meet mortgage payments began to be observed. Loneragan would contend that not so much greed as “self-preservation” then takes over. People tried to get rid of the mortgage-backed financial instruments they had on hand. When that proved impossible, they found they could not meet their own brokerage debt payments. The squeeze was on. But the possibility of borrowing from other banks, themselves caught in the squeeze, dried up as well. Banks are particularly vulnerable in a downturn, when falling asset values mean that their liabilities will soon exceed their assets. But in this case, banks were also in trouble because they did not have the liquidity to meet short-term debt payments. As we have seen, many banks were faced with balance-sheet or cash-flow insolvency.

When banks fail, their assets are sold, pulling asset values down still further in markets. Interbank lending becomes riskier as people do not know which banks may fail next. Finance is an interdependent network that can either work well or seize up. And banks create money by lending it to business entrepreneurs. But the low-interest rate environment of the expansion, coupled with the possibility of easy profits on the rising stock market, caused lending and debts to balloon. Moreover, the ratio of bank capital to bank loan portfolios rose to 1:30. But in the aftermath of the stock market shocks, banks wanted ratios of 1:15.<sup>21</sup> It is crucial, therefore, to have some method of bailing out banks so that their lending to business and to each other can resume at a level of credit sufficient for the world economy. In short, a stable banking system is essential to the functioning of the real economy of goods and services.

The role of foreign investors was another factor in the crisis. For example, the Japanese yen, also a world currency, allowed Japanese investors to borrow at very low interest rates at home in order to invest on Wall Street. As well, some economists would argue that U.S. income inequality also entered the equation. So far, it is mainly the lower, and the lower-middle income households who are defaulting on their mortgages. This is due partly to the lack of real income growth for those groups in recent years and a lack of saving.<sup>22</sup>

As banks fail, the loss of jobs in the financial sector is compounded by job losses in other sectors. Job losses reduce incomes and people's spending. When the sources of credit dry up, new and promising projects in other industries cannot obtain funding from banks or capital markets. Their production and employment plans are delayed or dropped. As well, consumers find their credit card debt unmanageable as interest rates rise and jobs are lost.

In our time, we are only beginning to adapt to the discontinuity of the macroeconomy being both a national and world economy. National economies need to cooperate sufficiently to sell their products to one another in a world economy. But it will take much discussion and diplomacy among countries such as the G-20 group, to develop similar national rules for a world economy. Meanwhile, we live with that lack, and the economic game becomes more of a free-for-all – one in which businesses try to survive competitively by producing in countries where costs are lower, or by defending their markets against competitors from elsewhere. The free international financial environment that has developed since the 1970s has benefited many countries. But it has also led to debilitating financial crises in Asia, Latin America and the former Soviet Union. The current global crisis may provide incentives to move national economies and their governments towards better international financial coordination.

## How Would Lonergan Explain What Happened?

Lonergan discusses “pure surplus income” or extraordinary profit, as well as price changes over a cycle of innovative growth, saying that failing to adapt to price and profit changes leads to the crises and downturns of business cycles. Let us examine each variable in turn.

### What Happens to Profits in an Innovative Growth Cycle?

Lonergan contends that the extraordinary profits in innovative growth are a “social dividend.” They occur temporarily, he says, as investment in production outpaces current output. Lonergan explains the cycle of extraordinary profits as follows. As the economy expands, net new investment is supplied by net aggregate saving, either directly by entrepreneurs or indirectly through the banking system, the stock market, or international financial institutions.<sup>23</sup> Net saving is done by anyone who does not spend all his or her income on consumer goods and services or on the replacement and maintenance of equipment and human resources needed for current production.

Typically, sources of net saving are profits and financial markets. Successful innovation expands the profits of production until the limits of resources or markets are approached. Then diminishing returns brings extraordinary profits to an end. Lonergan argues that, as the



expansion comes to an end, "there exist, in the mentality of our culture, no ideas, and in the procedures of our economies, no mechanisms directed to smoothly and equitably bringing about the reversal of net aggregate saving (that supplies new fixed investment) to zero."

New savings and investment fail to adjust downward when high incomes are relatively invulnerable. Lonergan suggests that "the obvious instance" is seen in interest-bearing bonds or in high fees or salaries. "Such instances of pure surplus income," he says, "are the last to feel the 'squeeze'... and the pressure of the squeeze is all the stronger and more relentless in other instances ... Such relative invulnerability (of high incomes) ... is sustained by a rate of (business) losses." As well, individuals continue to receive more income than they spend on consumption or replacement investment. And the losses in the economy will continue until aggregate net saving decreases, or until business losses lower prices enough to increase people's purchasing power and bring the depression to an end.

As Lonergan explains it, the losses must continue until invulnerable incomes are no longer in excess of the profit that production generates. "Until the position of the strong is undermined by the general and prolonged contracting, the requirement for a rate of losses continues and with it the depression ... In the limit the rate of

losses disappears and the distorted equilibrium gives place to a true equilibrium ... Orders for replacements begin to increase; they will be accompanied by ... new fixed investment ... the revival is underway."

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Lonergan also comments on the "palliatives" that producers and governments have tried in the past so as to avoid the end of extraordinary profits. In the list, he includes producers and governments trying to generate an excess of exports or producing armaments for wars to maintain demand for their products. He mentions labour unions who make untimely demands for wages and benefits when, in an expansion, profits are needed for investment. He suggests that some governments have the advantage of owning a world currency, which other countries need to hold as foreign reserves, and which they pay for by exporting their real goods and services. He explains that some countries have had colonies, which gave them income and trade advantages. He notes, too, that some governments have tried to maintain consumer demand through welfare state policies that often lead to government budget deficits. But experience has shown that broad welfare programs may discourage employment and may not reach those in need.<sup>25</sup>

Clearly questions remain. How are people to measure the dynamics of innovative growth so as to understand profit variation in

an expansion? How are corporations and governments to ensure that the extraordinary profits of an expansion will be reinvested for the benefit of society as a whole as well as of the corporation itself? How will a shift in the distribution of income as a capital expansion ends ensure sufficient demand for consumer goods and services to maintain employment and production.

I think Lonergan would argue that profits are necessary but not sufficient to ensure a stable economy. Economists know that, unless new innovations emerge, profit levels will decrease as innovations are imitated. Lonergan emphasized that when an expansion ends, the affected economic players will need to adapt their behaviour to a period of normal macroeconomic profit and to more equitable incomes that make possible fuller employment and consumption. Such adaptive behaviour would miss out on the excess profits of a boom but would avoid the economic disruption and human costs of a bust.

#### What Happens to Prices in The Innovative Growth Cycle?

According to Lonergan, the second important variable to watch in innovative growth is the consumer price index. He uses the term "aggregate basic price spread," which is the variation of consumer prices from cost price as profits rise in an expansion.<sup>26</sup> In an expansion, explains Lonergan, new investment spending for new equipment and skills will run ahead of the current production of

consumer goods and services. The source of the basic price spread, he says, is the difference between receipts from the production of consumer goods and services and their cost of production. In an expansion, the volume of employment and wage income will increase, raising consumer demand and consumer prices as long as the output of consumables lags their production. When prices rise, profits can be reinvested to expand that production.

For Lonergan, the acceleration factor in consumer prices will be positive only when current production exceeds current output. He argues that "in free economies the acceleration factors are not held down to a minimum." The expectation is that prices will rise further. "Each producer orders more materials, more semi-finished goods, more finished goods, than he would otherwise ... the initial rise in prices sets going a speculative expansion that makes the acceleration factors quite notable, expands the price spread still more, and stimulates a pace of further acceleration that ... will be quite impossible to maintain."<sup>27</sup>

According to Lonergan, it is banks, governments, and international financial institutions that make possible a speculative boom in the stockmarket. Easy money will raise prices for assets and for consumer goods and services. And there may be new money flows to investment even as the real expansion draws to an end. The

optimism that accompanies the new spending will, in his words, "offset any tendency towards a contraction of the price spread and will reinforce any tendency of the price spread to expand." Thus the eventual stock market break "intensifies the crisis of the (production) circuits, removing the hitherto swollen expansive tendencies and leaving the system from a greater height to fall." Next, "speculative assets are frozen as everyone wishes to sell before the prices fall further, and no one wishes to buy until they fall further ... Assets are frozen and then liquidated in a great drop in prices ... "<sup>28</sup> The result: as prices fall, businesses reduce their output and employment, and people's incomes shrink.

One classic way in which central banks have tried to manage economic booms has been to limit sources of new credit when price inflation indicates that money supply growth is excessive. Economists have also called for an economic system in which the money supply acts as the servant of the system of production, growing as closely as possible with the real economy. Today, central bankers, who have some independence from government, do try to manage this. But central banks have not attended sufficiently to stock market or housing price bubbles. Furthermore, their power is limited by global economic activities that move money in and out of national institutions. In short, there has not yet been the degree of

international coordination among banks and governments that a global economy needs.

In his discussion of foreign trade, Lonergan explains the disadvantages of imbalances in a country's balance of payments. An unfavourable balance, he says, makes a country dependent on foreign investment or foreign borrowing. Foreign investment can lead to domestic monetary expansion that may enable businesses to expand domestic productive capacity, thereby creating new jobs and increasing consumer demand. But to move the international payments towards balance, increased exports are needed to offset the excess financial imports. Recovery is more difficult as the interest and repayments on foreign loans adds to the costs of production, thereby limiting profits.

## Conclusion

While Lonergan explains how innovative growth need not end in collapse, a response to today's particular crisis must be worked out by the economists and politicians concerned. This paper has not attempted to spell out how the situation can be remedied. However, economist Daniel Trefler, in a recent paper on national policies for effective innovative growth in Canada, does discuss policies in his debunking of the myth that there must be a trade-off between a

prosperous society and a caring society. In fact, he finds that investment in people is effective in creating both a good quality of life and economic prosperity.

Traditionally, prosperity has been thought to depend on innovative economic growth that is accompanied by a rise in productivity. Productivity, Trefler emphasizes, would improve if we supported education from very early childhood through university, if we invested in workers, and if we reduced the taxes on the corporate income that is invested. Trefler also calls for efforts to reduce part-time work, as many workers have demanded.<sup>29</sup> Corporations' investment expenditure on research and development and patent applications are indicators of innovative growth and prosperity. And this again implies that education is important.

Trefler, for example, calls attention to the successful "Pathways program" in Toronto's Regent Park, a poor neighbourhood. The program, which reduced high-school dropouts from 50 percent to 10 percent and raised post-secondary enrolment rates from 20 percent to 80 percent, costs \$4,000 per child. It is money invested not only in children but in their community. Similar projects have been successful in the United States and other countries.

It appears that we must find a profitable capitalism, a capitalism that understands that extraordinary profits in economic growth will

return to normal levels as the production of new goods and services stabilizes – at least, that is, until new innovation occurs. Economists – Keynes, Lonergan, and Trefler among them – have called for a social level of investment by both the private for-profit and the non-profit sectors of the economy. Moreover, in free-enterprise market economies, producers and consumers must be expected to act within the law and within government regulations. Laws, especially tax laws and business regulations, can harm the economy when they are too restrictive, but regulations are necessary to frame economic production and exchange to benefit society.

Lonergan's positive economics builds on the objective data experienced in recurrent economic crises. However, in a human science such as economics in which human behaviour matters, questions inevitably arise as to how people foresee and respond to economic events. For instance, in response to the present economic and financial crisis, we should be able to expect that policy makers will not make the same errors as were made in the Great Depression. Indeed, people *can* learn from their mistakes. Policy makers have recently spoken out against policies of protectionism in foreign trade, policies that raise taxes or that tighten money and credit –all policies instigated during the Great Depression when countries were also struggling to keep their currencies on the gold standard for the sake of



their international trade. But such actions made that depression more severe instead of helping economies to recover.

Although international financial relations have continued to grow dramatically since the 1970s, the structures of global financial institutions have changed little since 1944. Clearly, new global players need better representation. The importance of the Middle Eastern countries as well as India, China, Russia and Brazil in international trade means that the structures of international finance will require rethinking to ensure long-term financial stability. Again, it is decisions by *people* that will influence our future economic data. Today's world leaders recognize that their economic interdependence demands both changes in international financial structures and better international policy coordination. Naturally, however, these changes take time and call for learning, conflict resolution, dialogue, and communication.

Many economists have gone beyond the assumptions of economic science to raise questions about government and institutional actions in the economy. Economists such as Hayek, Keynes, Schumpeter, and Lonergan, among others, have written on broader human and social themes. Certainly, Lonergan has insisted that technology, finance, the economy, and the polity are the essential bases for human, social, and cultural development.<sup>30</sup> However, he places, as first in importance, society and the people within it as those

for whom the economy operates. Although finance is essential, it is subordinate to the economy.<sup>31</sup>

The difficulty in a human science such as economics is that human decisions and choices depend on people's understanding of society, and of the constraints of production, exchange, and finance. Economic choices are often far reaching, especially so in a global economy. Those making decisions need to balance the value of the direct or intended effects of their actions against the possible negative, indirect, or unforeseen consequences.<sup>32</sup> It may sometimes be the case that the benefits of an economic action can be used to offset its negative effects.

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<sup>1</sup> See for example Finn Kydland & Edward Prescott, "Time to Build and Aggregate Fluctuations," *Econometrica* 50 (1982) 1345-1370; and Paul M. Romer, "Endogenous Technological Change" *Journal of Political Economy* 1990, vol.98, no.5, S71-S102.

<sup>2</sup> Bernard Lonergan, *For a New Political Economy*, Vol. 21, Collected Works Edition, edited by Philip McShane (Toronto : Toronto University Press, 1998), 287-292; *Macroeconomic Dynamics: An Essay in Circulation Analysis*, Vol. 15, Collected Works Edition, edited by Frederick G. Lawrence, Patrick H. Byrne, and Charles C. Hefling, Jr., (Toronto: Toronto University Press, 1999), 135-144. Lonergan's term for profit is surplus income. Pure surplus income is the extraordinary profit that appears in successful innovative growth.

<sup>3</sup> Bernard Lonergan, *Insight, A Study of Human Understanding*, Vol. 3, Collected Works Edition, edited by Frederick E. Crowe and Robert M. Doran (Toronto University Press, 1992 [1957]), 141-151. Lonergan describes the economy as a matrix or network of schemes of recurrence. The schemes are the interactions of production, exchange, and finance.

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<sup>4</sup> Lonergan, "Division of the Productive Process," *Macroeconomic Dynamics*, 23-28; *For a New Political Economy*, 234-237. Lonergan highlights the functional distinction between producer and consumer goods in a way that promotes understanding of their relations over time in production. Capital and consumer goods play different roles in an economy. Producer or capital goods build the economy's capacity to produce and are used in the production of consumer goods and services.

<sup>5</sup> Lonergan, *Insight*, 233-234. Lonergan discusses the dynamism of people using their practical intelligence to develop technology, economy, and polity.

<sup>6</sup> U.S. Bureau of Economic Analysis National Economic Accounts, Table 1.1.1. Accessed 23 November 2008.

<sup>7</sup> The clearest example of Lonergan's macrodynamics or cycles of innovative growth is an industrial revolution. Think of England in the 19<sup>th</sup> century, Germany at the turn of the 20<sup>th</sup> century, and the U.S. in the first half of the 20<sup>th</sup> century.

<sup>8</sup> Lonergan explains that the extraordinary profits of innovation are a social dividend to be reinvested so that society can share in the benefits. Like Keynes, Schumpeter, and Hayek, Lonergan calls for a social level of investment. The question is, How is a social level of investment to be encouraged in a democratic society? *Macroeconomic Dynamics*, 145.

<sup>9</sup> Lonergan calls this second phase in innovative growth, the "basic expansion." A full basic expansion depends on the return of profit levels to normal across the economy, and thus a more equitable distribution of income.

<sup>10</sup> Lonergan, "The Cycle of Pure Surplus Income," *For a New Political Economy*, 292-301; *Macroeconomic Dynamics*, 144-156.

<sup>11</sup> See for example, "A short history of modern finance," and other articles on the crisis in *The Economist*, October 18, 2008.

<sup>12</sup> Stephen Labaton, *New York Times*, October 2, 2008. Emailed by J.A. Raymaker.

<sup>13</sup> Alan Greenspan, *The Age of Turbulence*, (New York: Penguin Press, 2007), 367, 267-293.

<sup>14</sup> Government bonds or other paper of different maturities used to finance the budget deficit or refinance maturing debt, that is most often sold in financial markets.

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- <sup>15</sup> NPR audio “This American Life,” Summer 2008. Accessed September 2008.
- <sup>16</sup> Hyman Minsky (1919-1996), the Financial Instability Hypothesis, written in 1992. <http://econpapers.repec.org/paper/levwrkpap/74.htm>. Accessed November 29, 2008.
- <sup>17</sup> Frank Milne, “Anatomy of a Crisis: Role of Faulty Risk Management Systems,” C.D. Howe Institute Commentary, Toronto, Canada, October 2008.
- <sup>18</sup> Alan Greenspan, *The Age of Turbulence*, 178-179; 466-467.
- <sup>19</sup> IMF World Economic Outlook, April 2008, Executive Summary xvi.
- <sup>20</sup> The Economist, “Special Report on the World Economy”, October 11, 2008, 1-35.
- <sup>21</sup> The Economist Magazine, November 29, 2008, 73.
- <sup>22</sup> Email from Francis Parfitt, Senior Economist, Cabinet Office – Intergovernmental Affairs, Government of Ontario, Canada, November 1, 2008.
- <sup>23</sup> These temporary extraordinary profits of innovation are beyond normal returns to management, rents, interest to lenders, dividends to owners of shares in the enterprise, wages and salaries. Lonergan, *Macroeconomic Dynamics*, 81.
- <sup>24</sup> Lonergan, *For a New Political Economy*, 306-307; *Macroeconomic Dynamics*, 162.
- <sup>25</sup> Lonergan, *Macroeconomic Dynamics*, 82-86. See also John Richards, *Retooling the Welfare State: What’s Right, What’s Wrong, What’s to Be Done* (Toronto: C.D. Howe Institute 1997) Policy Study 31; “Reducing Poverty: What has Worked, and What Should Come Next,” C.D. Howe Institute *Commentary*, no. 255, October 2007
- <sup>26</sup> Cost for Lonergan includes all costs required to maintain the current level of production; that is, replacement and maintenance costs, management fees, interest and dividend costs as well as wages, salaries and benefits. See *For a New Political Economy*, 301-302; *Macroeconomic Dynamics*, 156-157.
- <sup>27</sup> See “The Cycle of the Aggregate Basic Price Spread,” *For a New Political Economy*, 301-307; *Macroeconomic Dynamics*, 156-162.
- <sup>28</sup> Lonergan, *For A New Political Economy*, 306, *Macroeconomic Dynamics*, 162, 80-82

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<sup>29</sup> Daniel Trefler, “Canadian Policies for Broad-based Prosperity,” the Innis Lecture, *Canadian Economic Review*, Vol. 41, No. 4, November 2008., 1156-1184. Other factors affecting prosperity are income differences between urban and rural areas, which may reflect a tax bias where cities are underfunded.

<sup>30</sup> Lonergan, *Insight*, 558-559.

<sup>31</sup> Lonergan, *For a New Political Economy*, 101

<sup>32</sup> Kenneth Melchin, “Revisionists, Deontologists, and the Structure of Moral Understanding,” *Theological Studies* 51 (1990), 389-416. Professor Melchin calls on ethicists “to understand the integral structures of linked schemes of decisions, goals, and consequences which function within concrete configurations of historical and social conditions.” He argues that ... “ethics is the sober business of rendering a service to all of humankind. Its data is the total lived experience of humankind, including its total religious experience. Its task is to understand the moral import of recurrent regularities in past experiences whose implementation in future decisions can help make life better in the widest and richest sense.”