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# INTEREST RATES, ROUNDABOUTNESS, AND BUSINESS CYCLES: AN EMPIRICAL STUDY

MARK GERTSEN\*

JEL CLASSIFICATION: B53, C33, E23, E32, E43, E50

**ABSTRACT:** I show evidence of Austrian boom-bust dynamics in historical data on the production structure of 28 developed economies. I employ an autoregressive distributed lag model to find that policy-induced deviations from the natural rate of interest increases roundaboutness. This could instigate an unsustainable boom. Additionally, I find that early-stage industries have higher cyclical sensitivity than late-stage industries, consistent with Austrian time-value dynamics in the structure of production.

## INTRODUCTION

The influence of interest rates on the production structure of the economy is a key concept within the Austrian framework. In

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particular, interest-rate-setting central banks are deemed to be institutions distorting the market, often with a combination of artificially low interest rates and expansionary monetary policy. During the Great Moderation some economists claimed that the central banking puzzle was solved, but the 2008–09 global financial crises reignited the debate around this topic. A decade later, central banks are still dealing with the legacy of this crisis, for which the consequences are yet unclear. In this paper I provide an uncommon (to most policy-makers) though sensible view that could enrich the debate about the consequences of policy-induced monetary expansion inevitably followed by boom-bust episodes similar to the one in 2008–09. To substantiate, I attempt to quantify the difference between the natural rate of interest, defined by Wicksell ([1898] 1962) as the unobserved equilibrium price of savings and investments, and the market interest rate set by the central bank. Subsequently, I explore the effect of this interest rate gap on the production structure, or roundaboutness, of 28 OECD economies over the years 2000–14. Roundaboutness as originally pioneered by Menger (1871) and later expanded by Böhm-Bawerk (1891) explains the indirectness and lengthiness of the process in which consumption goods are created. To capture the roundaboutness of an economy, I make use of the Gross Output (GO) metric pioneered by Skousen (1990, 2015, 2018). GO measures the combined value of all stages of production in the economy.<sup>1</sup> By dividing GO by GDP, one obtains a measure which increases (decreases) with a lengthening (shortening) of the production process. Böhm-Bawerk (1891) argues that more indirect processes *ceteris paribus* are associated with more economic progress and increased productivity. However, expansionary monetary policy is prone to instigate an unsustainable growth path. A low-interest rate policy stimulates investments which are not profitable under the natural rate, leading to malinvestment and overconsumption, in turn leading to boom-bust dynamics (Mises [1912] 1953; Hayek 1932, 1933; Garrison 2002, 2004).

This paper contributes in three ways. First, I construct a unique data set on Gross Output for 28 OECD countries over the years

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<sup>1</sup> While Skousen has formalized and widely promoted the concept of GO, it is wholly based on Rothbard's (2009, 396–403) distinction between the Keynesian "net expenditure / income approach" and the Austrian "gross expenditure / income approach".

2000–14. Second, I develop a proxy measure for interest rate gaps combining the Taylor rate, the consumption-investment (CI) rate and the long-term interest (LTI) rate. Austrian theory suggests that a larger interest rate gap positively influences the roundaboutness of the economy.

Third, I explore this theoretical relation in autoregressive distributed lag (ARDL) models. There are a few studies which examine this relation for individual countries (e.g. Mulligan 2006; Carilli et al. 2008), but the present paper is the first to explore the average relation for a large number of developed economies.

The result are consistent with Austrian business cycle theory (ABCT). I find that larger interest rate gaps are indeed associated with greater roundaboutness of the economy. Additionally, I find that this effect is stronger in a subsample of the five most roundabout of 65 industries than on average (though only to prolonged gaps, of more than one year, and when using a Taylor-based proxy for the interest rate gap). In comparison, the association is three to five times weaker in a subsample of the five least roundabout industries. Also, these additional analyses are in line with Austrian business cycle theory, which implies that more roundabout, hence more capital intensive industries, should respond more to interest rate changes (Skousen, 2015, 273–304). An important qualifier of this analysis is that the results are based on average effects found in historical data—they are not forecasts, nor descriptions of individual countries. The findings do suggest that on average in 28 OECD countries during the years 2000–14, the association of empirical proxies for the interest rate gap and roundaboutness were just as suggested in Austrian business cycle theory.

Apart from the scientific contribution, the study has clear societal relevance. The effects of expansionary monetary policy are obviously of great and very topical concern. Monetary mismanagement is fundamental to macroeconomic dysfunctions in the intertemporal allocation of resources (Dobrescu et al. 2012). Policy makers as well as academics will benefit from an analysis that adds the Austrian perspective to what is primarily a mainstream debate on the direction of monetary policy.

This paper is further organized as follows. Section 2 provides a survey on the current knowledge about ABCT, both theoretical and

empirical. Special attention is given to the theory and application of the Hayekian triangle. In section 3, I present an econometric model to estimate the responsiveness of (sectoral) roundaboutness to the interest rate gap and in section 4 I explain how the dataset is constructed. Section 5 provides results including model variations and a sensitivity analysis. Section 6 concludes the paper and offers some suggestions for future research.

## 1. AUSTRIAN BUSINESS CYCLE THEORY TO DATE

### 1.1 Roundaboutness and Capital Theory

The conventional measure for the size of the economy is the gross domestic product (GDP). Skousen (2010, 2015, 178–85) lists the shortcomings. GDP is a net output measure of finished goods and services, which leaves out intermediate production activity and business spending in the supply chain. Each of these expenditures is the result of entrepreneurial decision making, which in turn influences the rest of the economy. Entrepreneurs do not start or expand activities based only on value added. If we are to construct an empirical proxy for ‘how the economy is doing,’ it should capture the totality of spending decisions. A gross measure, not a net measure, satisfies this criterion. Note that because of this theoretical motivation, there is no double counting problem, a common objection to the GO concept. In a system of accounts, intermediate business to business transactions are just as relevant and real as economic activity linked to final goods and services (Jorgenson et al. 2006). As Skousen (2015) puts it, “GO is the top line and GDP is the bottom line of national accounting, ..... [and both] are of equal importance” (p. xix). I will operationalize this below by using both GO and GDP in an empirical proxy of roundaboutness.

The degree of roundaboutness in an economy, a concept of central theoretical importance in Austrian theory, can be proxied by the value of GO relative to GDP. With increasing roundaboutness, increasing amounts of savings-induced capital are employed to sustainably increase the capital intensity and efficiency of the intertemporal production process. The aggregate of all these processes, with varying degrees of efficiency, forms the time structure of production of the economy. Hayek (1932) further developed the time structure

of production into a schematic triangular construct, known as the Hayekian triangle. The improved version of this triangle as designed by Garrison (2002) is nowadays used to describe the successive processes of capital (goods) accruing value from the original means of production, through the resource phase, up to the final stage where they are transformed into consumption goods. Capital is heterogeneous: it moves up along the hypotenuse as working capital, which, at the final stage, is consumed (in)directly or put into use as fixed capital, aiding future working capital forward in the production process.

The concept of time is of crucial importance to capital heterogeneity and its impact on economic booms and busts. Garrison (1990) shows that the neoclassical stock-flow approach, which claims production and consumption are simultaneous, is unrealistic. The theory assumes all subjective factors in the production process as fixed through time and view the capital stock as a 'permanent fund.' This process may *appear* simultaneous, but when one refrains from the temptation to generalize capital as an attempt to formalize it, one notes that a fundamentally uncertain future by definition means the production process is subjective and not fixed through time. The subjective factors in this process are typically entrepreneurs who make decisions about how and what capital formation takes place (Mises [1949] 1998). These decisions are based on the interpretation of the economic outlook and are by no means based on clairvoyant expectations. Inherently, a fraction of the entrepreneurs always either misjudges the economic climate or is downright unfortunate, and the macroeconomic impact of these events is relatively small. However, when there is a broad central-bank-induced misconception about future demand due to misaligned—investor vs. consumer—(time) preferences, the fraction of bad decision-making significantly increases, which causes a consumption boom and a severe capital misallocation at the same time. Were it for neoclassicals, capital could easily be moved elsewhere at no cost. In reality, however, the liquidation, the adjustment and the redirection of wrongly allocated capital is a painful process.

## 1.2 Interest Rate Effects and Financial Sector Dominance

The main culprit for capital misallocation is the distortive effect of monetary expansion on the natural rate of interest. An excessive

increase of the money supply sends conflicting signals to investors and consumers creating a wedge between the savings and investment equilibrium on the loanable funds market. The expansion lowers the interest rate and creates two virtual equilibria: (1) consumers see the lower rate as an incentive to spend more *now*, while (2) investors are led to believe that consumers will spend more *later*. This illusion of a surplus of available savings for early-stage investment purposes has been called ‘forced savings’ by Hayek (1932) and is wholly equivalent to Mises’s ([1949] 1998) malinvestment. Garrison (2004) shows graphically how these forced savings affect the structure of production leading to a ‘dueling’ production structure (Cochran 2001).

The rational expectations hypothesis is often brought up as a refutation of this theory (e.g. Wagner 1999, Cowen 1997). Evans and Baxendale (2008) nullify this argument introducing entrepreneurial heterogeneity in a prisoner’s dilemma setting based on an article by Carilli and Dempster (2001). This use of the prisoner’s dilemma illustrates the limits of rationality. Many investors may well be aware of the fact that a policy-induced credit expansion increases nominal rather than real savings. Some may even be aware of the boom-bust consequence. However, since central authorities have the sole right of issuing legal tender, investors (but even more so, banks) can externalize the cost of recessions towards (other banks and) the taxpayer (Hayek 1933). In fact, profit-maximizing investors *must* increase their lending or their competition will (King 2016). The incentive for the individual makes the collective system worse off. Even though investors might thus be aware of unsustainable lending practices, they are competitively forced into this behavior. In the words of Carilli and Dempster (2001), ‘banks need *not* be fooled or tricked into increasing lending’ (p. 324) but their customers *will* be fooled. The majority of customers is ignorant and just seeks the lowest price forcing banks to compete while unaware of the unsustainable system. Even the educated customer is ‘bribed’ into foolish behavior—in a macroeconomic sense—because he will otherwise get outcompeted by the ignorant ones (Garrison 1989, Block 2001). The result is that economic agents (no matter their background) are ‘pushed up’ the boom phase of the cycle towards margin lending because strategic behavior induces them to. This imposes clear restraints on the impact of rationality. The ‘search for yield’ systematically moves lenders towards riskier investments.



Bloomberg (2016) writes: “Credit fund managers who, having largely sat out on the recent rally in junk-rated debts, now find themselves *forced* to re-enter the fray after underperforming the wider market” (emphasis mine). Additionally, Hendrickson (2017) finds that investment by firms at lower interest rates is increasingly more prone to coordination failures, adding to risk and uncertainty.

Mulligan (2013) argues that the ABCT shows resemblance with Minsky’s (1992) Financial Instability Hypothesis (FIH) in which a first mover advantage is present for lenders (borrowers) extending (taking on) more credit (debt). This means that the prisoner’s dilemma works over both the extensive and intensive margin: who is in/out, and who is first? Thus not only does excessive credit expansion lead to moral hazard, it also allows an adverse selection problem to materialize since margin lending (borrowing) lures ‘bad’ entrepreneurs and non-creditworthy borrowers into the market (Evans and Baxendale 2008). Moreover, informational cascades (or Cantillon effects) increase investor-consumer inequality due to a knowledge gap which in turn is amplified through the adhesive power of the financial sector (Howden 2010). Resource misallocation along the structure of production shifts focus and resources away from the real sector. Entrepreneurial knowledge is extracted by the financial sector leaving the real sector at a serious knowledge disadvantage on how to align consumer demands along the structure of production.

### 1.3 Empirical Approaches to the Structure of Production

According to Lewis and Wagner (2016) Austrian macro theory suffers from an underdevelopment in the use of empirics to support theory. Expanding on those, or developing new ways to empirically support theory would, according to the authors, make Austrian macro theory able to compete with mainstream dominance. Examples of empirical Austrian research are Mulligan (2006), Fillieule (2007), Young (2012) and Cachanosky and Lewin (2014) amongst others. Not surprisingly, they all relate to the Hayekian triangle in one way or another.

Mulligan (2006) for instance finds that lowering the interest rate below sustainable market rates provides a short-term boost to consumption and investment, but has a decreasing effect in the long run. This is in line with the ABCT. Fillieule (2007) mainly analyzes the

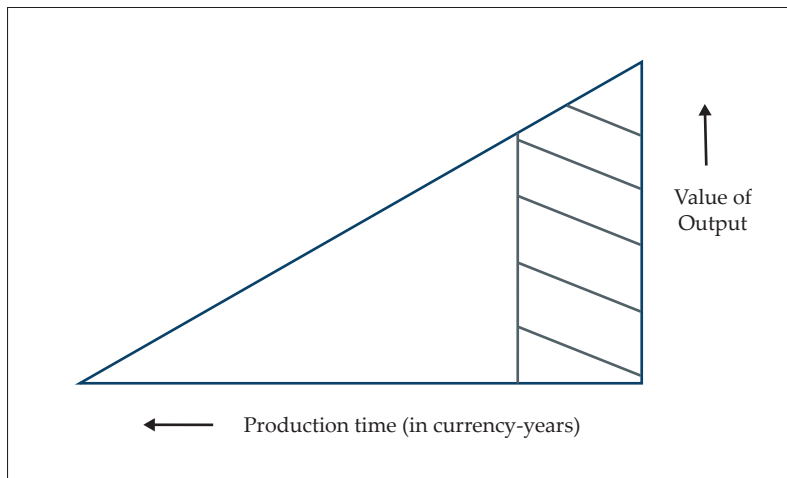
goods-in-process structure of production and finds that a lower time preference is followed by a lengthening of the production structure in which the profitability of earlier stages relatively increases. While this provides some concrete results, he uses a formalized form of the average production structure concept of Böhm-Bawerk (1891) to counter the infinite-stages problem. Economists like Garrison (1981) argue this to be a futile attempt to quantify a series of subjective numbers into one value. An alternative approach by Cachanosky and Lewin (2014), though also based on an average production period, uses the economic value-added (EVA®) literature which allows them to ‘reframe roundaboutness and interest rate sensitivity into financial terminology’.<sup>2</sup> In their review of the triangle, they effectively determine that, due to its nature, empirical research is prone to subjective judgment because of the very structure of the triangular concept. The authors do endorse the approach taken by Young (2012) who qualitatively examines the impact of interest rate deviations on the aggregate roundaboutness of the Hayekian triangle rather than on specific stages. Young’s analysis of the 2002–09 US structure of production is relatively simple but elegant. He develops a ‘total industry output requirement’ (TIOR) as an indicator for roundaboutness. I will expand on his work by taking this indicator to a country level. The breadth of my dataset allows me to assess the economy-wide roundaboutness of 28 countries. This generalization, however, comes at the cost of not being able to assess individual country characteristics. Based on regression analysis, I expect similar results to match with ABCT in the sense that the production structure of an economy will expand with a larger interest rate gap.

## 2. METHODOLOGY

I use cross-country regression analysis to examine whether there are generalizable effects of a larger interest rate gap on the roundaboutness of economies. I approach roundaboutness by creating a similar metric to Young’s (2012) TIOR which I call TEOR, or, the ‘total economy’s output requirement’. The TEOR of a specific country reflects the amount of gross output required from its domestic industries both directly and indirectly to deliver a currency unit of final output.

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<sup>2</sup> EVA® is a registered trademark of Stern Stewart and Co. (Cachanosky and Lewin 2014).

**Figure 1. A Simplified Hayekian Triangle**

The TEOR is defined as the ratio of gross output to final output (excluding foreign inputs for simplicity). To illustrate, in Figure 1 I present the Hayekian triangle with intermediate and final outputs. The TEOR value is the surface of the triangle (total gross output) divided by the shaded part (final output). Formally, consider that the economy consists of an array of industries indexed by  $i=1, \dots, N$ . Industries process intermediate (capital) goods yielding value added, denoted by  $\sum_{i=1}^N VA_i = VA$ , equal to final output (Garrison 2002). According to the Bureau of Economic Analysis, value added equals the difference between an economy's gross output and the cost of its intermediate inputs.<sup>3</sup> Industry gross output is denoted by  $X_i$ .

Total gross output is then given by

$$(1) \quad X = \sum_{i=1}^N X_i$$

from which the TEOR can be derived as,

$$(2) \quad \frac{\sum_{i=1}^N X_i}{\sum_{i=1}^N VA_i} = \frac{X}{VA} = \frac{\text{Gross output}}{\text{Value added}} = \text{TEOR} = \text{roundaboutness}$$

<sup>3</sup> See [https://www.bea.gov/faq/index.cfm?faq\\_id=1034](https://www.bea.gov/faq/index.cfm?faq_id=1034).

By definition, a relative increase in the production of intermediate goods increases TEOR. Assuming no monetary intervention, such a situation occurs when the average relative time preference of consumers decreases. Conversely, a relative increase of final output decreases TEOR which occurs when the average relative time preference of consumers increases. This allows TEOR to function as an interpretation of roundaboutness which is an important step in the empirical analysis of ABCT.

To measure the interest rate gap, I take the difference between a country's market interest rate (i.e. the short-term interest rate) and the natural interest rate. I proxy the latter following the original equation of Taylor (1993):

$$(3) \ r_t = \pi_t + \alpha_\pi (\pi_t - \pi_t^*) + \beta_Y (Y_t - \bar{Y}_t) + r_t^*$$

To simplify, I follow Taylor's (1993) rule of thumb to attach 0.5 weights to  $\alpha$  and  $\beta$ . I specify  $(Y_t - \bar{Y}_t)$  as the output gap  $Y_t$  which then yields,

$$(4) \ r_t = \pi_t + 0.5(\pi_t - \pi_t^*) + 0.5 Y_t + r_t^*$$

where  $r_t$  is the market interest rate that *should be* targeted,  $\pi_t$  is the current core CPI inflation rate,  $\pi_t^*$  is the desired inflation rate and  $r_t^*$  is the estimated value of the equilibrium real interest rate. The latter's estimations differ (Yellen, 2015) but I will follow Young (2012) and Taylor (1993) by setting it to 2 percent. A desired inflation rate of (close to) 2 percent is commonly accepted in OECD countries hence I equally standardize that rate. Natural rate estimation then follows:

$$(5) \ r_t = \pi_t + 0.5(\pi_t - 2) + 0.5 Y_t + 2$$

Combining this with the *actual* market rate, the interest rate gap is calculated as:

$$(6) \ r_t - r_a = r\_gap$$

The baseline regression then estimates the relation between the interest rate gap and roundaboutness:

$$(7) \ logTEOR_{c\ t} = \beta_{1\ c} + \beta_{2\ r\_gap\ c\ t} + \beta_{j\ c\ t} x_{j\ c\ t} + \varepsilon_{c\ t}$$

where  $c$  and  $t$  respectively denote country and year. To recognize country heterogeneity, I control for time-invariant country characteristics in the intercept. Absolute differences between the two

interest rates are useful because it allows for assessing the impact of sustained gaps. A production structure might not instantly adjust to a one-off deviation. Negative gaps ( $r_t < r_a$ ) pose no problems to the expected outcome since its reverse equally holds true (Rosen and Ravier, 2014).

Given the likelihood of a dynamic relationship and potential autocorrelation, I include lags of both variables and assume (trending) stationarity. Additionally, interest rates changes—often piecemeal—are subject to the Cantillon mechanism resembling distributive effects. Similarly, TEOR is also dependent on its previous values since economic growth is equally gradual. The possibility to detect the movements of both variables could be improved using quarterly or monthly data which I unfortunately do not have.

A consequence of using the ARDL model is the violation of the assumption that the dependent variable is uncorrelated with the error term—ARDL implies autocorrelation. To eliminate this, I include sufficient lags of both variables such that lagged errors can be excluded. The optimal lag amount minimizes the Akaike and Bayes information criteria. I further control for demographics since this is known to push down interest rates (Rachel and Smith, 2015; Carvalho et al., 2016). The ratio of old population (age > 65) to total population captures this effect.

To assess the elasticity of specific production stages to interest rate gaps, I follow Young (2012) and average respectively the five most roundabout (MR) and least roundabout (LR) industries into two ‘TIOR’ rates. The goal of creating these two averages is to examine the difference in cyclical sensitivity between early and late stages. Last, the CI and LTI proxy function as alternative to the Taylor proxy. Interest rate gaps are:

$$(8) r\_gap_{CI} = \frac{\text{consumption (as \% of GDP)}}{\text{investment (as \% of GDP)}} - r_a$$

$$(9) r\_gap_{LT} = r_{LT} - r_a$$

The CI proxy is inspired by Carilli et al. (2008) but modified following Rothbard (2009) who points out that the proportion between consumption and investment (rather than saving) reflects individual time preferences.

### 3. DATA

One of the main contributions of this paper is to construct a unique data set on Gross Output for 28 OECD countries over the years 2000–14.<sup>4</sup> Underlying data has been retrieved from the World Input-Output Database (WIOD) 2016 release (Timmer et al. 2015, 2016). Specifically, I extracted annual data from 28 different National Supply and Use Tables (SUTs) corresponding to the OECD countries. The database is classified according to the ISIC Rev. 4 and its tables are based on SNA 2008. To retrieve GO per country, I use ‘total intermediate consumption’ (column labeled ‘INTC’) for GO—at basic prices—from the Use tables. This includes value added (at basic prices) plus intermediate inputs adjusted for taxes less subsidies. I calculate GDP as total value added of all industries using the same source (taxes and subsidies excluded).

Necessary data for the Taylor-rate equation are collected from several sources. The realized market interest rates per annum are retrieved from the OECD database on short term interest rates, with the exception of rates for Hungary, Japan and Slovenia which were collected from AMECO. Core CPI rates and output gaps are respectively from the OECD and AMECO database. Data on the old population ratio is from the World Bank Development Indicators (WDI). I calculated the consumption-investment interest rate proxy using data from the WDI. Specifically, I use Gross Capital Formation (as percent of GDP) and Final consumption expenditure (as percent of GDP). The long-term interest rate is proxied by OECD government bond data except for Estonia, Slovak Republic, and Slovenia, which are from the AMECO database. Some years are missing: Czech Republic (2000), Estonia (2011–14), Korea (2000), Mexico (2000, 2001), Poland (2000), Slovenia (2000, 2001).

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<sup>4</sup> See Appendix A for a country overview.

**Table 1. Descriptive Statistics Including Variable Definitions**

Variables		Mean	Std. Dev.	Min	Max	Obs
TEOR	Overall	2.114676	.225896	1.710082	2.783239	420
Total economic output	Between		.221732	1.732869	2.563897	
requirement	Within		.0592171	1.893153	2.381133	
MR	Overall	7.971532	13.18658	2.64948	176.28	420
Average TIOR of five most	Between		5.706832	3.704307	30.14698	
roundabout industries	Within		11.9334	-15.7166	160.7456	
LR	Overall	1.288068	.1144785	1.087378	1.666902	420
Average TIOR of five least	Between		.1090287	1.097168	1.502767	
roundabout industries	Within		.0401903	1.193027	1.452203	
r_gap (in %)	Overall	.7418975	2.556133	-9.586836	11.44673	420
Natural-to-market gap	Between		1.078422	-2.782372	2.814299	
(Taylor rate proxy)	Within		2.325873	-11.53267	10.52899	
r_gap (in %)	Overall	.130709	2.936574	-15.55812	7.641661	420
Natural-to-market gap	Between		1.878827	-4.743801	2.893584	
(Consumption-investment	Within		2.282854	-12.67127	5.715418	
proxy)						
r_gap (in %)	Overall	1.459914	2.007454	-5.03416	21.92432	409
Natural-to-market gap	Between		1.019766	-5.889171	4.866493	
(Long term interest rate	Within		1.738077	-5.182894	18.51774	
proxy)						

MR and LR are calculated using underlying data from the national SUTs of the WIOD. One exception is made for Japan, where one of the five least roundabout industries, household activities, was calculated in a seemingly inconsistent way—I used the sixth least roundabout industry instead. According to Rosen and Ravier (2014), a new business cycle began around December 2000, hence I use 2001 as the base year to determine MR and LR.

The panel data are strongly balanced ( $N = 420$ ). For further descriptives, see Table 1. Most variables are complete except for the LTI proxy. TEOR is relatively normally peaked but slightly skewed rightwards. MR has a few large outliers which might bias the estimators—normalizing solves some of the skewness. LR is more normally distributed but somewhat skewed to the right. The MR–LR distributional difference makes sense from a theoretical perspective. The included 65 industries roughly follow a Pareto-like distribution where MR industries are relatively more dispersed and further from the mean than LR industries. Taking the average from

a sample of 10 industries to mitigate this difference barely affects LR but greatly affects MR potentially risking diluting its elasticity to the interest rate gap.

## 4. ANALYSIS

### 4.1 Baseline results

I use a panel fixed effects baseline ARDL regression with clustered robust standard errors to counter heteroskedasticity in the error variance. A unit root test rejects non-stationarity. To determine the optimal lag amount for TEOR and the interest rate gap I add to both variables up to 5 lags and subject each specification to an AIC/BIC test. This suggests an ARDL(1,0) process to be optimal for modeling the relationship. A manually performed RESET test confirms that the model does not suffer from omitted variable bias. To check whether serial correlation has been eliminated, I compare the ARDL(1,0) process to eight other variations and again subject them to an information criteria test. To visualize the variations:

$$\text{Process variations: } \begin{bmatrix} \text{ARDL}(1,0) & \text{ARDL}(1,1) & \text{ARDL}(1,2) \\ \text{ARDL}(2,0) & \text{ARDL}(2,1) & \text{ARDL}(2,2) \\ \text{ARDL}(3,0) & \text{ARDL}(3,1) & \text{ARDL}(3,2) \end{bmatrix}$$

$$\text{AIC results: } \begin{bmatrix} -2081.046 & N/A & N/A \\ -1934.602 & N/A & -1937.585 \\ N/A & N/A & -1792.445 \end{bmatrix}$$

The model comparison shows that the ARDL(1,0) process remains to be the best fit. BIC results correcting for observation loss—due to added lags—points in the same direction. Note that it is not a certainty that autocorrelation in the error term is completely eliminated, but it is as much as possible.



**Table 2. Comparison of the relationship between TEOR and the interest rate gap based on three different proxies. The dependent variable is logTEOR.**

VARIABLES	(1) ARDL(1,0) Taylor rate	(2) ARDL(1,1) Consumption- investment rate	(3) ARDL(1,0) Long term interest rate
logTEOR [t – 1]	0.69093*** [0.05210]	0.72308*** [0.04817]	0.72267*** [0.05344]
r_gap (in %)	0.00112** [0.00047]	-0.00576*** [0.00124]	-0.00120 [0.00107]
r_gap (in %) [t – 1]		0.00544*** [0.00096]	
old population (% of total)	0.00217** [0.00085]	0.00170* [0.00090]	
Constant	0.19562*** [0.03978]	0.18256*** [0.03899]	0.20841*** [0.03968]
Observations	392	392	386
R-squared	0.57060	0.64766	0.56270
Adj R-sq increases with r_gap	YES	YES	YES
Number of Countries	28	28	28
Country FE	YES	YES	YES

Robust standard errors in brackets

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.10

To compare the Taylor-based ARDL process to the other two proxies, I run through the exact same process to determine the most optimal amount of lags for both specifications. Results suggest an ARDL(1,1) and ARDL(1,0) process for respectively the CI and LTI proxy. A comparison of the TEOR responding to all three proxies is provided in Table 2. Column 1 shows that a Taylor-based interest rate gap of 1 percent significantly results in a 0.11 percent more roundabout economy, *ceteris paribus*. Thus, GO increases with 0.11 percent as compared to final output, a difference in difference effect. The second column displays contradicting results and with a zero net effect does not support ABCT, whereas results in column 3 are insignificant altogether. I want to make two additional remarks. First, I left out the control variable for the LTI proxy because demographic effects are already captured by the long term government bond interest rate (Rachel and Smith, 2015). Second, note that I included

a test whether the adjusted R-squared in fact increases upon adding  $r\_gap$  (and its lags) to the specification, indicating its relevance.

## 4.2 Cyclical Sensitivity and Country Conditions

I now substitute TEOR with MR and TR and run through the same procedure for lag and model optimization. Significant outcomes are for MR combined with the Taylor proxy and for LR combined with the CI and LTI proxy. Other variations return insignificant results. I provide the significant results in Table 3. Interestingly, the MR response to the interest rate gap is negative for the contemporaneous year but positive for its first lag. A prolonged ( $t > 1$ ) interest rate gap of 1 percent results in a net positive effect on roundaboutness of around 0.65 percent.

**Table 3. Comparison of the average TEOR to stage-specific TIORs. DEPVAR refers to the relevant dependent variable specified below the column number.**

VARIABLES	(1) TEOR ARDL(1,0)	(2) MR ARDL(1,1) Taylor rate	(3) LR ARDL(1,0) Consumption- investment rate	(4) LR ARDL(1,0) Long term interest rate
logDEPVAR [t – 1]	0.69093*** [0.05210]	0.52544*** [0.10867]	0.77843*** [0.05966]	0.85397*** [0.03667]
$r\_gap$ (in %)	0.00112** [0.00047]	-0.01851* [0.01027]	0.00214*** [0.00061]	0.00138* [0.00072]
$r\_gap$ (in %) [t – 1]		0.02501** [0.01087]		
old population (% of total)	0.00217** [0.00085]	0.06881*** [0.02025]	0.00057 [0.00107]	
Constant	0.19562*** [0.03978]	-0.17822 [0.37298]	0.04879*** [0.01282]	0.03767*** [0.00907]
Observations	392	392	392	386
R-squared (within)	0.57060	0.38242	0.71256	0.71703
Adj R-sq increase with $r\_gap$	YES	YES	YES	YES
Number of Countries	28	28	28	28
Country FE	YES	YES	YES	YES

Robust standard errors in brackets

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$

The responsiveness to an interest rate gap of the most roundabout industries is 5 times larger than that of the least roundabout industries (0.14–0.21 percent), providing the gap persists during at least two successive years. This suggests that more remote industries are as expected more elastic to interest rate changes. The CI and LTI proxy are inherently less volatile and might therefore explain the non-significant responses of MR. Conversely, the same reasoning might apply to LR estimations.

Finally, I check whether the baseline Taylor-based TEOR results are robust to specific country conditions (table not reported). In particular, I include three additional control variables on their own, and as interaction with the interest rate gap. First, I look at the growth rate of financial depth and proxy this with the growth rate of liquid liabilities as a percentage of GDP (King and Levine 1993). Second, I use R&D expenditures growth (as percent of GDP) to proxy capital intensity. Third, I use stock market capitalization growth (as percent of GDP) to determine the impact of financial sector development. A developed financial sector is generally associated with economic growth and better resource and capital allocation (Allen and Gale 2000, Levine 2002). For every addition, I re-run the lag and model optimization process to determine the most optimal ARDL specification. None of the three added control variables, nor their interactions with the interest rate gap, significantly changes the earlier results from Table 2.

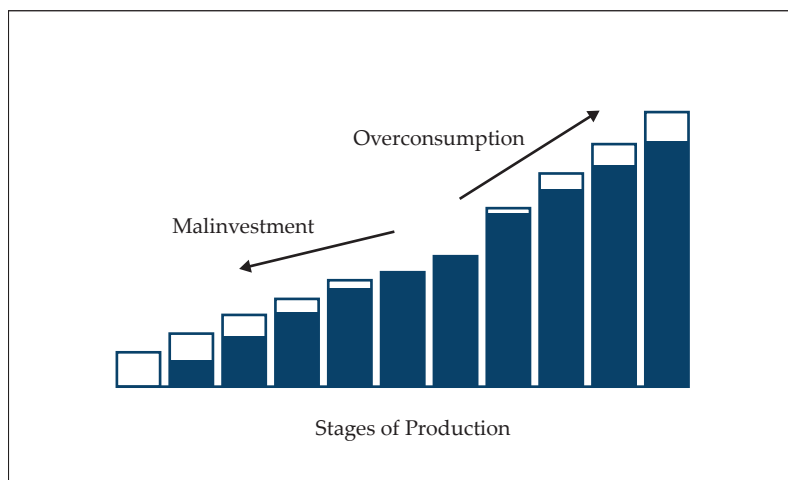
## 5. DISCUSSION AND CONCLUSION

### 5.1 Discussion of the Results

A positive relationship is found between TEOR and the Taylor-based interest rate gap. The outcome is both significant and economically relevant. Over the observation period, GO shows a relative growth rate of 0.11 percent to GDP for every percent increase in the interest rate gap. This translates approximately into a 0.22–0.33 percent change in GDP terms (i.e. TEOR rate\*  $\Delta$ GO). For a small (big) country like Belgium (United States) this means *hypothetical* capital misallocation of EUR 920 million (USD 34 billion) in 2014. In the upswing of a business cycle, capital misallocation accumulates over the years and pushes the economy

beyond its maximally attainable production possibilities frontier until the inevitable correction sets in (Garrison 2004). A back-of-the-envelope calculation provides further color to this scenario by suggesting more capital misplacement results in deeper downturns (see Appendix B).<sup>5</sup>

**Figure 2. The Dueling Hayekian Triangle**



Source: Garrison (2004).

Policy-induced interest rates suggest an unsustainable increase in the capital-intensity of the economy potentially initiating an Austrian boom-bust cycle. Artificially low rates provide a short-term boost to both final output and gross output. ABCT predicts the latter effect to be dominant and this is indeed observable in the results. Early stage industries respond up to 5 times stronger to (prolonged) interest rate gaps than late stage industries. Early stage—more roundabout—industries act more pro-cyclical and more volatile

<sup>5</sup> I note two caveats here. The amounts mentioned for capital misallocation are hypothetical in the sense that it is impossible to know what share of capital is easily redirected during economic recovery and what part is plainly wasted. It is thus equally impossible to accurately determine the accumulated stock of misallocated capital the moment before a boom turns into a bust. The amounts are merely provided to give an impression of the magnitudes potentially affecting the production structure of an economy.

due to time-value of money effects (Skousen 2015). Interestingly, MR industries also require a multi-lagged model suggesting they are also more sensitive to delayed interest rate effects. The fact that the average TEOR response is smaller than the lower-bound LR response may seem odd. A possible explanation for this behavior is that the average response is likely similar to a response from middle stages. In a 'dueling' Hayekian triangle setting, middle stages are relatively negatively affected due to misallocated capital (Cochran 2001, Garrison 2004). This results in a kink in the hypotenuse (see Figure 2). The potential relatively negative effect of the middle stages might have pulled down the economy wide average industrial response to an interest rate gap.

ABCT is particularly consistent with Minsky's (1992) FIH which describes that extended periods of economic prosperity lead to under-evaluation of market risk inducing firms and other market participants to increase investment (Mulligan, 2013). While this process of progressive overleveraging is endogenous, the Austrian monetary expansion is exogenous. However, both mechanisms are prone to the influence that expansionary monetary pressure exerts on inflating the boom. Increasing roundaboutness due to interest rate gaps closely resembles a Minsky-like period of euphoria. Quite literally, due to misperception of risk variability and adjustment costs (i.e. price signals), entrepreneurs increasingly engage in plan revisions to further expand their business (Mulligan, 2013). This decreases productivity and leads to wasteful spending (Dobrescu et al., 2012).

## 5.2 Limitations and Suggestions for Future Research

Based on the constructed dataset, I put forward some suggestions I chose not to pursue in the current paper. First, different natural rate proxies could be used to calculate the interest rate gap. Labauch and Williams (2003) provide such an alternative, albeit technical, as well as Keeler (2001) who uses a term spread technique, which however should be slightly adjusted to meet the critique of Carilli et al. (2008). Second, the Taylor rate could equally be established differently. Here, both the proposition of Yellen (2015) to modify the real equilibrium interest rate or a non-generalized inflation rate to match specific countries' past and present inflation targets could be followed.

Others interested in this topic but rather on a country level could combine the methodology of Young (2012) and the dataset of the present paper. This could yield 27 additional qualitative country-specific studies on production structures and would greatly expand the knowledge of Austrian business cycles in each of those countries. Additionally, these studies could be extended with an empirical VAR analysis including a Granger-causality check á la Carilli et al. (2008), which is quite laborious for panel data. If employing VAR, longer time series would then be desirable (e.g. by adding more years or finding quarterly or even monthly data).

Furthermore, the methodology of this paper could be used for within country panel analysis on the industrial level—each industry has its own TIOR. Data for this can be retrieved from the national SUTs of the WIOD (Timmer et al., 2015). In fact, the Young analysis could even be applied to a singly industry within or cross-country.

### 5.3. Conclusion

The empirical analysis of this paper confirms that Austrian boom-bust dynamics are economically relevant and do not just remain ABCT artifacts. I have employed an autoregressive distributed lag model to analyze historical data related to the production structure of 28 developed economies. I found that policy-induced deviations from the natural rate of interest increases roundaboutness and could instigate an unsustainable boom. Additionally, I found that early stage industries have higher cyclical sensitivity than late stage industries confirming the importance of time-value dynamics in the structure of production (Skousen 2015). I used three natural rate proxies the significance of which varied across the different dependent variables. The Taylor proxy applies best to average economic as well as early stage roundaboutness, while the alternative proxies are a better fit for late stage roundaboutness. Even though these differences can be explained to a certain extent, further research on these causes is warmly welcomed.

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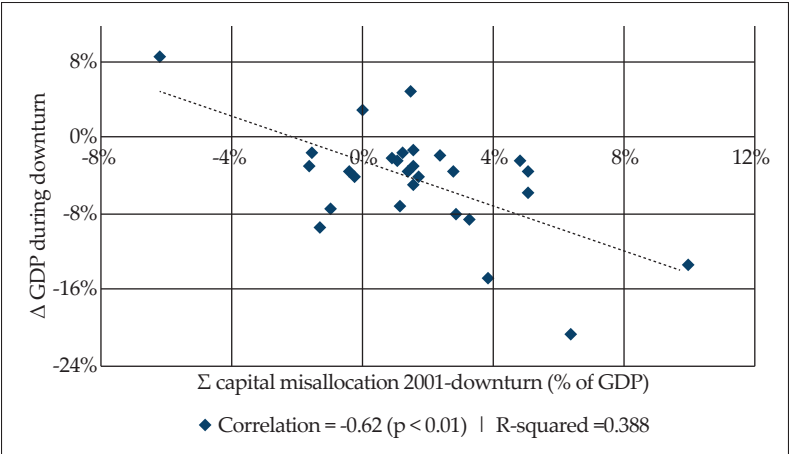
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Appendix A. Overview of Countries Included in the Dataset

Countries	Currency used in database		
	USD	EUR	Other (in brackets)
EU 28	Estonia, Greece, Portugal, Slovak Republic, Slovenia	Austria, Belgium, Finland, France, Germany, Ireland, Italy, Netherlands, Spain	Czech Republic (CZK), Denmark (DKK), Hungary (HUF), Poland (PLN), Sweden (SEK), United Kingdom (GBP)
Other	United States		Australia (AUD), Canada (CAD), Japan (JPY), Korea (KRW), Mexico (MXN), Norway (NOK), Switzerland (CHF)

Source: Timmer et al. (2015). Note: I use GO/GDP ratios hence currencies play no role.

Appendix B. Cross-Country Boom-Bust Statistics



Note: Capital misallocation is the cumulative sum over the years 2001 until the year before a downturn. For some countries this exceeded 1 year of negative growth in which case I also included the next year in Δ GDP during downturn. As the scatterplot shows, some countries did not experience a clear boom-bust scenario. Excluding these from the results does not change the significance of the correlation coefficient.

# NEGATIVE INFLATION TARGETING: A PROPOSAL OF A NON-DISTORTIONARY MONETARY POLICY

TOMÁŠ FRÖMMEL\*

JEL CLASSIFICATION: B53, E31, E32, E52, E58

**ABSTRACT:** This paper aims to propose a non-distortionary monetary policy objective consistent with the Austrian business cycle theory. Since the price level should fall in the growing economy in the Hayekian framework, introduction of a negative inflation target combined with the Taylor rule is suggested as a non-distortionary monetary policy. To keep the money stream stable, the optimal inflation target would be equal to the opposite of the growth rate of the economy. Such policy should lead to the smoothing of the business cycle path since monetary policy could be less activist compared to the current state of the positive inflation target. Possible criticisms of this suggestion are anticipated and addressed in this paper.

## INTRODUCTION

Some economists from the Austrian school tend to criticize the existence of the central banks and suggest their abolition and transition towards a free banking system. Nonetheless, the existence of the central banks is a state that apparently cannot be changed, at least in the near future. For this reason, suggestions of the central

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banks' abolition cannot be taken seriously, since they are far away from current reality. Although it may be true that the economy would develop better without the central banking system, Austrian economists might come up with some more realistic suggestions of rules for central bank policy.

The aim of this paper is, therefore, to develop a non-distortionary monetary policy objective consistent with the Austrian business cycle theory. The central bank committed to such an objective should not lower permanently the market rate of interest below the natural level, and would not distort free-market system of relative prices and trigger artificial boom-bust cycles.

The introduction of a negative inflation target combined with the Taylor rule is suggested as a satisfactory policy objective, complying with requirements presented above. Since, in the Hayekian framework, the price level should fall as the natural output of the economy grows, monetary policy could be less activist compared to the current state of positive inflation rate targeting; relative prices would not be distorted by permanent injections of new money into the economy and the course of economic development could be smoothed under the proposed rule.

There have already been some suggestions that the price level should be allowed to fall in the growing economy (e.g. Hayek 1935, Friedman 1984, Selgin 1997, or Potužák 2016). Unlike these papers, this essay respects the fact that current central banks do not target money supply and rather use interest rates as their policy instrument. Therefore, we aim to propose a non-distortionary rule prescribing how the central bank might set its interest rates. For this reason, our suggestion might be more realistic compared to the other suggestions.

The structure of the paper is as follows. The first section briefly presents monetary policy rules and especially the inflation targeting regime and the Taylor rule. The second section presents criticism of the inflation targeting from the Austrian perspective. The next section suggests the introduction of a negative inflation target and explains advantages of this policy. The last section aims to anticipate possible criticisms of the suggested policy and tries to disprove them.

## 1. INFLATION TARGETING AND THE TAYLOR RULE

Monetary policy rules are commonly seen as more convenient than discretionary policy (Sargent and Wallace 1975, Barro and Gordon 1983, or Svensson 1999). The main argument in favor of policy rules is the problem of time inconsistency of the central bank policy. A central bank committing itself to some policy rule should not adopt any policy that has not been declared in advance. Policy rules may thereby reduce entrepreneurs' uncertainty concerning future monetary policy conditions, and the central bank becomes more predictable.

Furthermore, if arguments of the Austrian business cycle theory critics (e.g. Tullock 1988, Cowen 1997, or Wagner 1999) were right, monetary policy rules should lead to gradual smoothing of the cyclical development of the economy. If the central bank adopted and publicly communicated some policy rule, monetary policy would become more transparent and entrepreneurs would be able to understand the consequences of central bank policies more easily. Then, they would not be fooled by the monetary authority and an artificial boom<sup>1</sup> would not be triggered. To adopt a policy rule seems to be a suitable action since it limits the central bank's ability to increase the amount of money in the economy and hereby initiates artificial boom-bust cycles.

One of the most common monetary policy rules or regimes is inflation targeting, defined by Bernanke and Mishkin (1997, 97) as "the announcement of official target ranges for the inflation rate at one or more horizons and... explicit acknowledgement that low and stable inflation is the overriding goal of monetary policy." This regime of monetary policy is defended mostly for its high transparency and comprehensibility. A credible central bank may, by setting and publicly communicating its inflation target, simply

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<sup>1</sup> The Austrian business cycle theory (Mises 1953, Hayek 1933 and 1935, or Garrison 2001) predicts that lowering the market rate of interest below its natural level and subsequent non-uniform inflow of new money into the economy leads to investment into more roundabout production processes. Since increased investments are not accompanied by increased voluntary savings, newly created structures cannot be finished in the future. The economic boom is not sustainable for this reason, and the recession is an unavoidable result that allows re-equalization between real savings and investments.

control inflation expectations of agents in the economy and hereby control the inflation rate (Bernanke and Mishkin 1997). Furthermore, Svensson (1999) states that the inflation targeting regime helps to maintain low and stable inflation rate in the long run.

Taylor (1993) suggests a policy rule that allows the central bank to respond to the output gap and to the difference between the actual inflation rate and target for the inflation rate. The rule may be expressed by the following equation according to Mankiw's (2009) macroeconomics textbook:<sup>2</sup>

$$(1) i_t = \rho + \pi_t + \theta_\pi (\pi_t - \pi^T) + \theta_y (y_t - y^*),$$

where  $i$  denotes the central bank's nominal rate of interest,  $\pi$  stands for the rate of inflation,  $\pi^T$  is the central bank's target for the inflation rate (set as a positive number),  $(y_t - y^*)$  expresses the percentage difference between current real output of the economy and its natural level,  $\rho$  is the natural rate of interest, and parameters  $\theta_\pi$  and  $\theta_y$  express responsiveness of the central bank to changes in the inflation rate and to the deviations of real output from its natural level. Parameters  $\pi^T$ ,  $\theta_\pi$  and  $\theta_y$  are set by the central bank. Money supply is endogenous under this rule.

The Taylor rule implies that if the rate of inflation is on the target and output does not deviate from its natural level, the central bank should set its nominal rate of interest equal to the nominal equilibrium rate of interest  $\rho + \pi_t$ . If the rate of inflation decreases below the inflation target, the central bank should decrease its nominal rate of interest and *vice versa*.<sup>3</sup>

Despite its several critics (e.g. Orphanides 2001, or Orphanides and Williams 2002), some version of the Taylor rule is used in models of new Keynesian economists (e.g. Clarida, Galí and Gertler 1998, or Svensson 2000a).

<sup>2</sup> Taylor (1993) assumed specific values of parameters  $\rho$ ,  $\pi^T$ ,  $\theta_\pi$  and  $\theta_y$ . Mankiw's (2009) equation is written without any assumptions for parameters and variables.

<sup>3</sup> A sufficiently strong decrease in the central bank's rate of interest pushes the real rate of interest downwards, below the natural level. This stimulates investments and consumption and increases the rate of inflation, which is hereby stabilized at its target.

## 2. INFLATION TARGETING: AN AUSTRIAN PERSPECTIVE

Let us now assess the policy of inflation targeting from an Austrian perspective. The first problem may arise with the definition of inflation. While Austrian economists usually define inflation as an increase in the quantity of money in the circulation, mainstream economists usually speak of an increase in the aggregate price level (Bagus 2003). For purposes of this paper, let us accept the mainstream definition; inflation means a rising price level and may be measured by the consumer price index or by the GDP deflator.

Another, more serious, problem arises with targeting the positive inflation rate in the growing or stationary economy. While all central banks targeting inflation have positive inflation targets, Hayek (1928) suggests that if the quantity of money is held constant, prices must fall if the output rises and *vice versa*.

Hayek (1935) further argues that in the growing economy, the equality of the natural rate of interest and the market rate of interest is feasible only in case of the falling price level; price level should not be stabilized in the growing economy.<sup>4,5</sup> If prices are intended to rise or remain stable in such an economy, the central bank must permanently increase the amount of money in circulation, and it thereby creates permanent pressure for the reduction of the market rate of interest below its natural level.<sup>6</sup>

This may be simply shown using the quantity theory of money and the equation of exchange:

$$(2) M(t) \cdot V(t) = P(t) \cdot Y(t),$$

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<sup>4</sup> Wicksell (1936) argues that the market rate of interest is equal to its natural level in case of stabilized price level. Hayek (1935) objects that this holds only in the stationary economy. Further discussion on this issue may be found in Potužák (2018).

<sup>5</sup> White (1999) points out that Hayek (1976) not criticizing price level stabilization is not consistent with his previous works. Komrska and Hudík (2016) reject this alleged inconsistency.

<sup>6</sup> This holds regardless whether the central banks control interest rates or the money supply. An attempt to stabilize the price level in the growing economy leads to an increase in the money supply and to a decrease in the rate of interest below its natural level.



where  $M$  expresses the money supply,  $V$  velocity of circulation of money,  $P$  aggregate price level and  $Y$  real output. The expression  $MV$  on the right side of the equation 2 may be called nominal income of the economy.

Equation 2 implies that in case of a stable velocity of money and a stable money supply, nominal income is stable as well; then, if real output rises, the price level must fall. A permanent increase in the price level in an economy with growing natural output unambiguously implies the necessity of a permanent increase in the money supply or velocity. Targeting a positive inflation rate in the economy with growing or stationary natural output necessarily implies permanent pressure for the reduction of the market rate of interest below its natural level, which according to the Austrian business cycle theory, distorts the free market system of relative prices and triggers an artificial boom. Potužák (2018), therefore, shows that inflation targeting (or price level stabilization) is not a suitable policy in the economy with growing natural output; price level may be stabilized only in a stationary economy.

Furthermore, inflation targeting leads to the distortions in the free market system of relative prices (Cochran 2004). An increase in the price level due to an increase in the amount of money in circulation is never uniform; some prices rise and some may even fall when the central bank injects new money into the economy (Mises 1953). Selgin (1997) describes a case of a decrease in only one individual price due to a positive shift in technology while all the other prices remain unchanged. In such case, aggregate price level slightly decreases, and the central bank needs to increase the money supply to stabilize it. Thus, after a decrease in only one individual price, the central bank aiming to stabilize the price level changes all the prices in the economy. Selgin (1999) states that even Hayek realized that attempts to stabilize the price level if real output rises lead to serious dislocations of relative prices.

The last objection deals with the central bank's alleged ability to simply control inflation expectations in the economy. This might be true; nevertheless, Murphy (2005) proposes that entrepreneurs need not care about all prices in the economy or about the aggregate price level. What matters in entrepreneurs' decision-making are expectations about only a small set of market prices; entrepreneurs need to know only prices of their inputs and outputs. Since an

increase in prices after monetary expansion is never uniform (Mises 1953), inflation expectations are different from expectations of individual price movements. All individual prices may change even in case of price level stability; hence, entrepreneurs may expect a change in a small set of prices even in case of a stabilized price level. Furthermore, some individual prices may decrease even in the case of an increasing price level. The presumed advantage of the inflation targeting regime might be hereby partly disproved from an Austrian perspective since the central bank does not possess the ability to control individual-price expectations, but only price-level expectations or inflation expectations.<sup>7</sup>

To sum up this section, it seems that inflation targeting suffers from several serious objections and, from an Austrian point of view, should not be evaluated as a suitable regime of the central bank policy in the growing economy. In the next section, we will introduce a rule that might be more convenient from the Austrian perspective.

### 3. SUGGESTION OF THE NEGATIVE INFLATION TARGET

There have already been some attempts to suggest a monetary policy rule that would not initiate boom-bust cycles in the growing economy. Hayek (1935) proposes that the central bank should not stabilize the price level, but rather money stream defined by the total nominal spending in the economy. Potužák (2016) explains that only keeping the money stream  $MV$  constant protects the economy against adverse effects of shocks to the velocity of money circulation that are similar to the effect of shocks to the money supply. Under Hayek's (1935) rule,<sup>8</sup> money supply changes only in case of velocity changes; the central bank compensates changes in velocity of money circulation by opposite changes in the amount of money in the economy. Under such a rule, the price level would fall in the economy with growing natural output, which is consistent with the Austrian view presented in the previous section.

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<sup>7</sup> Inflation targeting might be probably problematic from some parts of mainstream economics (i.e. Lucas 1972) as well since it targets something that no single agent in the economy uses as his benchmark.

<sup>8</sup> Potužák (2016) uses the term 'Hayek  $MV$ -rule.'

Nevertheless, currently central banks usually do not control the money supply but set nominal interest rates to keep the money growth within a certain interval and to fulfill their objectives. For this reason, Hayek's proposal is not further considered as a suitable rule, but the suggestion of stabilizing money stream  $MV$  will be preserved.

Some economists (e.g. Bean 1983, Hall and Mankiw 1994, West 1994, or McCallum and Nelson 1999) suggest nominal income targeting as an optimal monetary policy regime. Nominal gross domestic product would grow at a constant rate equal to the sum of the long-run average rate of growth of real output and targeted inflation rate. Nonetheless, such a policy is not significantly different from the inflation targeting. If nominal income growth is targeted, the right side of equation 2 is targeted to rise permanently. Then, the left side must grow at a stable growth rate as well, which means a permanent injection of new money into circulation. For this reason, nominal income targeting cannot be recommended as a suitable policy, since it suffers from the same problems as the inflation targeting.

As was already explained in the previous section, the Hayekian framework predicts that the aggregate price level must fall in the economy with growing natural output. Hence, introduction of the negative inflation target is suggested. The quantity theory of money and the equation of exchange is used to derive this negative inflation target. Equation 2 may be rewritten using the growth rates of all variables, obtaining the following equation:

$$(3) \frac{\dot{M}(t)}{M(t)} + \frac{\dot{V}(t)}{V(t)} = \frac{\dot{P}(t)}{P(t)} + \frac{\dot{Y}(t)}{Y(t)}.$$

A constant money stream  $MV$  is desired for the reasons explained above. Equality of the growth rate of the economy with the growth rate of potential output is assumed in the long run:

$$(4) \frac{\dot{Y}(t)}{Y(t)} = \frac{\dot{Y}^*(t)}{Y^*(t)},$$

Hence, conclusions of Hayek (1928, 1935) combined with equations 3 and 4 imply the following formula for the optimal inflation target:

$$(5) \pi^T(t) = -\frac{\dot{Y}^*(t)}{Y^*(t)},$$

implying that in the Hayekian framework, the growth rate of the price level should be equal to the opposite to the growth rate of the potential output of the economy. The central bank could still use the Taylor rule and only use the equation 5 to set its optimal inflation target. Since the growth rate of the economy is roughly constant in the long run on the balanced-growth path (Barro and Sala-i-Martin 2004), target for inflation should be constant over time as well in such an economy.<sup>9</sup>

Such a monetary policy regime could be acceptable for advocates of the inflation targeting (Bernanke and Mishkin 1997, or Svensson 1999) since their arguments in favor of the regime of inflation targeting might hold regardless whether the target is positive or negative. The suggestion of a negative inflation target incorporates a desired high level of transparency, trustworthiness and predictability of the central bank policy; by publicly announcing its negative inflation target, the central bank might reduce uncertainty concerning future monetary policy conditions and hereby control inflation expectations of entrepreneurs. Thus, from this perspective, inflation targeting with the positive target might not be more advantageous compared to the suggested negative inflation target policy.<sup>10</sup>

Nonetheless, negative inflation target policy could be more suitable than the inflation targeting with the positive target. Since,

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<sup>9</sup> Campbell and Mankiw (1987) argue that an economic development has a stochastic trend and, thus, a growth rate of the economy is not constant over time. If this were true, the inflation target should be set as a long-term average growth rate of the economy and should be held constant for a longer time period. It would mean that monetary policy would not be completely neutral, since changes in the growth rate of the economy could cause deviations of the central bank's inflation target from the optimal inflation target prescribed by the equation (4), but the central bank could simply control inflation expectations.

<sup>10</sup> Nonetheless, inflation targeting proponents (Bernanke and Mishkin 1997, or Svensson 1999) broadly defend positive inflation targets. Our suggestion of negative inflation target policy would probably be criticized by them, even though the central bank would remain transparent and predictable. This objection will be discussed in the fourth section.

according to Hayek, the aggregate price level should gradually decrease in the economy that is going through technology-induced growth, monetary authority need not be so activist when targeting the negative inflation rate. Positive inflation rate in the economy with growing natural output must always be induced by the central bank injecting new money into the economy; on the contrary, negative inflation may be achieved *per se*, without any monetary authority actions.

If the central bank accepted negative inflation target policy, adjustments of the interest rate and money supply would not be needed so often and the free-market system of relative prices should be distorted less compared to targeting the positive inflation rate. Since the central bank would not permanently lower the money rate of interest below its natural level, monetary policy would not be excessively expansionary and would not initiate artificial boom and bust cycles so often. Output of the economy would be stabilized around its potential level and the course of the economic development would be smoothed.

Furthermore, since the central bank would not intervene permanently in the money markets, a free market system of relative prices would not be artificially distorted. Entrepreneurs might be able to form expectations and predictions of their prices more easily and more accurately than in case of the positive inflation target since prices would be affected only by market forces and fundamentals and not by monetary authorities (Murphy 2005).

Finally, introduction of a negative inflation target might not mean a large change in current central bank policies. Central banks setting a negative inflation target could still use some kind of the Taylor rule; the suggestion of a negative inflation target means only a change in one parameter of the monetary policy rule determined by the central bank.

#### **4. POSSIBLE CRITICISMS OF A NEGATIVE INFLATION TARGET POLICY**

Besides previously discussed advantages of the negative inflation target, there might be some criticisms of the suggested policy rule. This section aims to anticipate and partly disprove them.

Firstly, the suggested policy with a negative inflation target could not ensure absolute soundness of money. The central bank would have to intervene in credit markets in case of changes in the velocity of money circulation. A decrease in velocity should be accommodated by an increase in the money supply that would keep the money stream  $MV$  constant (Hayek 1935). Nevertheless, since injections of new money into the economy are not uniform and it is not ensured that new money enter exactly to the sectors with decreased velocity, free-market system of relative prices may be distorted by an inflow of new money. This monetary accommodation is, however, desirable since otherwise the economy would suffer from stronger deflation than implied by equation 5.

Moreover, the central bank would have to intervene during the business cycle since real output of the economy equals to the potential output only in the long run, and the same holds for the inflation rate and inflation target. In the short run, since the economy is hit by supply and demand shock and goes through cyclical fluctuations, the central bank committed to the negative inflation target policy would have to intervene by adjusting the rate of interest (and hence the money supply) to stabilize the inflation rate at its target and the output at its potential. If the economy is hit by a positive supply shock (i.e. due to a drop in commodity prices) and deflation deepens, the central bank, to comply with its negative inflation target, needs to lower its rate of interest to increase the amount of money in the economy. Such policy leads to a smaller decrease in the aggregate price level and the desired negative inflation rate target is met.<sup>11</sup> Nonetheless, the increase in prices after a monetary expansion is not uniform and the free market system of relative prices is distorted by such an attempt to override a supply-driven price development. The Austrian business cycle theory predicts that an artificial boom might be triggered by such policy. Hence, the suggested policy might not work optimally during the recessions when the inflation rate decreases below its target, which is attainable only after monetary expansion. Hence,

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<sup>11</sup> The other possible way to conduct monetary policy in such a situation would be not to react at all and to let prices freely adjust. We treat such policy as less suitable since the rate of inflation would not be stabilized at the target and the central bank would lose control over inflation expectations.

the suggested policy might not be called non-distortionary, but rather less distortionary.

This criticism of inflation targeting, however, holds regardless of whether the inflation target is positive or negative. Nonetheless, Mises (1953) and Hayek (1933, 1935) claim that cyclical fluctuations of the economy are induced by overly expansionary policy of the monetary authority. The previous section concluded that a negative inflation target policy restricts interventions of the central bank in the credit markets and might lead to the business cycle smoothing. Then, the inflation rate should not deviate frequently from its targeted value and the frequency of central bank interventions should be lower compared to the positive inflation-target policy. From this perspective, the negative inflation target seems to be more appropriate than the positive target, although absolute neutrality of money would not be ensured.

Secondly, negative inflation target might be criticized by New Keynesians since they commonly prefer a positive inflation rate and there occurs a widespread fear from deflation (e.g. Akerlof, Dickens and Perry 1996, or Bernanke and Carey 1996). However, Borio and Filardo (2004a) distinguish three types of deflation: the good, the bad, and the ugly. Deflation implied by the proposed negative inflation target policy corresponds to the good one, caused by an increase in labor productivity and economic growth. Hence, there might be no reason for fear from this harmless deflation. Furthermore, Sargent and Wallace (1975) suggest that fully anticipated price changes should have no effect on the economic development. If the central bank with the negative inflation target were credible enough, there would be no unexpected deflation and no harmful effects on the economy.<sup>12,13</sup>

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<sup>12</sup> Any differences between the actual and expected rate of inflation might be avoided to prevent the deflation spiral and potentially other adverse effects of deflation. For this reason, if the central bank decided to implement the suggested negative inflation target policy, it should be implemented by gradually decreasing the inflation target accompanied by transparent communication of the central bank, so that all people may build the decreased inflation target into their inflation expectations.

<sup>13</sup> Atkeson and Kehoe (2004) and Ryska (2017) showed empirically that there is no link between deflation and depression, except for the period of Great Depression. This may be another argument against fear from deflation.

Another argument in favor of the positive inflation rate claims that even fully anticipated deflation may be harmful since it leads to a reduction in consumer spending; consumers expect further decrease in prices and postpone their purchases in order to buy cheaper in the future (Krugman 1998). Potužák (2015) rejects this argument since the optimal flow of consumption over time does not depend on a ratio of present and future prices of consumption goods. The intertemporal allocation of consumption is determined by the real rate of interest. If expected deflation leads to a decrease in nominal rate of interest, real interest rate remains unaffected and optimal flow of consumption remains unaffected as well. Hence, there is no reason to be afraid of spending postponement in case of fully expected deflation.<sup>14</sup>

Thirdly, the proposed policy might be criticized for the problem of the zero-lower bound on nominal interest rates. Many economists (e.g. Summers 1991, McCallum 2000, Reifschneider and Williams 2000, Svensson 2000b, or Eggertsson and Woodford 2003) point out that nominal interest rates cannot fall below zero. In case of the inflation rate below the target, the Taylor rule implies the necessity of lowering the central bank's rate of interest. Because of the zero-lower bound, nominal interest rate could not be decreased below zero, which would increase real interest rate and the central bank would not be able to meet its inflation target. One might expect that the probability of the lower zero bound attainment would be increased in case of negative inflation target since equilibrium nominal interest rates would be closer to zero, compared with targeting the positive inflation rate.

Let us solve this issue. The Fisher equation expresses the following relation between the nominal and real rate of interest:

$$(6) \ i(t) = r(t) + \pi(t),$$

where  $i$  denotes the nominal interest rate,  $r$  stands for the real interest rate and  $\pi$  expresses the inflation rate. It is obvious that the negative inflation rate decreases the nominal interest rate compared to the positive target. Assuming that the inflation rate equals its target and real output is stabilized around its potential in the long

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<sup>14</sup> Further discussion on this issue may be found in Kovanda and Komrska (2017).



run, plugging equation 5 into equation 6 implies that under the negative inflation target policy, the nominal interest rate would be given (in the long run) by the difference between the real interest rate and the growth rate of potential output of the economy:

$$(7) \quad i(t) = r(t) - \frac{\dot{Y}^*(t)}{Y^*(t)}.$$

It may be shown that the real rate of interest is higher than the growth rate of the real output if the economy is dynamically efficient (Romer 2006), hence, if the economy does not over-accumulate capital. In such an economy, the nominal interest rate is positive in the long run (Potužák 2016). Hence, even if the central bank targeted negative inflation rate, nominal interest rate would remain positive in the long run.<sup>15</sup>

A zero lower bound might be hit in the short run since the inflation rate may fall below the target and a negative output gap may occur during the business cycle. In such a case, the Taylor rule prescribes that the central bank should lower the nominal interest rate. Since the nominal interest rate would be close to zero in the long run, there would be only limited scope for lowering the interest rates and the zero lower bound might be hit. Nonetheless, we have shown that the course of the business cycle might be smoothed under the negative inflation target policy, hence, the zero bound on nominal interest rates should not represent a serious threat under the proposed policy rule. Furthermore, since the path of economic development should be smoothed under the proposed policy, the probability of the zero-lower bound hit should be even lower than in the case of positive inflation target. The proposed negative inflation target policy might be superior to the current policies with positive inflation targets.<sup>16</sup>

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<sup>15</sup> Nominal interest rate would definitely be closer to zero than in the case of positive inflation target.

<sup>16</sup> Furthermore, Borio and Filardo (2004b) examining 14 economies in the 19<sup>th</sup> century conclude that the zero bound was never hit when the economy experienced sound deflation driven by technological progress and economic growth. This empirical result might support our theoretical conclusions, although there were no central banks in most of countries in the 19<sup>th</sup> century, while our suggestion of negative inflation target still counts with a central bank that actively sets interest rates.

Finally, New Keynesian economists (e.g. Summers 1991, Akerlof, Dickens and Perry 1996, or DeLong and Sims 1999) claim that a moderate positive inflation rate permits maximum employment and output growth in the long run because of the downward nominal-wage rigidities. For this reason, Ball (2013) even argues for an increase in inflation targets. Deflation might lead to higher than natural growth in real wages, which would increase involuntary unemployment. Nevertheless, the question is whether a decreasing profile of nominal wages would be necessary under the suggested policy. As the economy goes through the technology-induced growth, real wages grow because of the growing productivity of labor. Nominal wages might be kept constant and decreasing price level would lead to desired increase in real wages.

Let us examine this issue mathematically. Nominal wage  $w_N$  is defined as a product of the real wage  $w_R$  and the price level  $P$ :

$$(8) \quad w_N(t) = w_R(t) \cdot P(t).$$

Then, the growth rate of the nominal wage may be expressed by the following equation:

$$(9) \quad \frac{\dot{w}_N(t)}{w_N(t)} = \frac{\dot{w}_R(t)}{w_R(t)} + \pi(t).$$

Neoclassical growth models<sup>17</sup> predict that in the economy on the balanced growth path (steady state), the growth rate of the real wage is given by the technology growth  $g$ . Furthermore, equation 5 expresses the idea that the growth rate of the price level under the suggested negative inflation target policy equals the opposite of the growth rate of the potential output. Neoclassical growth models predict that this growth rate is given by the sum of the population growth  $n$  and the technology growth  $g$ . By plugging these growth rates into equation 9, we obtain the following formula for the growth rate of the nominal wage under the suggested policy:

$$(10) \quad \frac{\dot{w}_N(t)}{w_N(t)} = g - (n + g) = -n.$$

<sup>17</sup> Neoclassical growth models are explained in Barro and Sala-i-Martin (2004) or Romer (2006).

We have expressed that the nominal wage growth rate would be given by the opposite of the population growth rate.<sup>18</sup> Hence, downward rigidity of nominal wages constitutes a serious objection against the suggested negative inflation target policy if this policy were used in countries with positive population growth. In such countries with downward rigidities of nominal wages, our suggestion would lead to higher than natural growth in real wages, which would increase involuntary unemployment.

Nevertheless, Hayek (1976), Selgin (1997) and de Soto (2012) state that rigidities in nominal wages may be strengthened by the inflationary monetary policy. If real wages are rising due to technological progress and the central bank targets positive inflation rate, nominal wages must rise by a higher growth rate than the price level. This creates an environment that limits downward flexibility of nominal wages. In an environment of a stable and expected decrease in the price level, rigidities in nominal wages could be at least partly eliminated since employees could be even willing to accept a moderate decrease in their nominal wages implied by equation 10 and a falling price level would lead to an increase in their real wages.

## CONCLUDING REMARKS

This paper aimed to propose an objective for the central bank policy consistent with the Austrian business cycle theory. The research was motivated by the fact that many Austrian economists suggest a banking system without the central bank. Nevertheless, the existence of the central banks probably cannot be changed. Hence, Austrian economists might aim to find a non-distortionary rule for the monetary policy.

Since the price level should fall in the economy with growing natural output in the Hayekian framework, a positive inflation target is achievable only if the central bank regularly increases the amount of money in circulation. This policy is criticized from an Austrian perspective since increasing money supply pushes the money rate of interest below its natural level hereby initiates an artificial boom-bust cycle.

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<sup>18</sup> Potužák (2015) comes to the same conclusion.

Introduction of a negative inflation target was suggested in this paper. Since a constant money stream is desired from the Austrian perspective, we proposed inflation targeting with the target set as the opposite number to the growth rate of the economy.

Such a policy should be superior to the positive inflation rate target since it reduces activism of the monetary authority and smooths economic development. Furthermore, all advantages of the positive inflation targeting might be kept. Possible criticisms of the suggested policy rule were anticipated and aimed to disprove, although it is not a completely non-distortionary policy.

In our view, the main challenge for future research lies in integrating the Austrian theory of capital and business cycle into the DSGE models that are one of the building blocks of modern macroeconomics. Development of the economy under the suggested negative inflation target policy could be simulated in such framework, which could help to further disprove possible criticisms of our suggestion.

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# INTRA-FIRM COORDINATION THROUGH RULE-FOLLOWING AND THE EMERGENCE OF HIERARCHY

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**ABSTRACT:** Rules and rule-following are becoming better understood as decision-making and coordination mechanisms. Further, that hierarchy is an underappreciated element of natural spontaneous, rule-based, orders has caused confusion. The article argues firstly that the ability to meld rule-following and hierarchy in one theory of the firm presents an opportunity for a possible consistent Austrian theory of the firm. The paper then proceeds to discuss how rule-following is embedded in conventional theories of the firm and how a rule-based firm can create value in the larger spontaneous order of the extended market. The paper concludes by arguing that even though conventional views around hierarchy and the giving of orders within a firm may have a role, the conventional view may be under-privileging the role of rules, rule-following and the consequent natural emergence of hierarchy.

*“The enemies of liberty have always based their arguments on the contention that order in human affairs requires that some should give orders and others obey” (Hayek 1960, 159).*

*“We may only learn from the necessity of rules, wherever men have intercourse with each other” (Hume 1751, 38).*

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## INTRODUCTION

It is a universal feature of firms that they are hierarchical (Williamson 2009). Every firm, no matter how egalitarian, has a ‘boss’; even in Koch’s (2007, 130, 133) market-based management some individuals have more ‘decision-rights’ than others. It is a common view that firms are hierarchical in order to facilitate the flow of ‘orders’ and ‘commands’; hierarchy is equated to authority which inevitably is exercised through commands or orders (Schlicht 1998, 220).

The essential nature of command in conventional theories of the firm is clear from Coase’s seminal essay on the firm: “... the distinguishing mark of the firm is the supersession of the price mechanism...” (Coase 1988, 36, 38); he goes on to give a command as an example of such a supersession: an employee moving from department Y to department X “because he is ordered to do so” (Coase 1988, 35). This view of firms as command led hierarchies is strongly held because it is so intuitive.

The purpose of this article is to challenge this view that command is essential to the nature of the firm, to argue that we have misunderstood hierarchy and that rule-following, i.e. uncommanded, behaviour, may be a more important coordination mechanism for intra-firm activities than is generally recognised.

The article is divided into four parts. The first part looks at the emerging literature on hierarchy in naturally occurring spontaneous orders. The second part looks at the Austrian literature on the firm and the role of ‘command’ and ‘rule following’ in that literature and shows how understanding hierarchy as a natural feature of spontaneous orders resolves some difficulties in that literature. The third part looks at the conventional literature on the firm where rule-following has been a feature but where there is still recourse to command as being viewed as the primary coordination mechanism. The fourth section of the article argues that intra-firm coordination through rule-following extends the problem-solving power of the extended market order and allows different firms to create value in the larger market order in different ways. The paper concludes by suggesting that the role of rule-following within the firm has been under-appreciated and under-privileged.

## **1. Hierarchy is a feature of natural spontaneous orders—an unexpected development.**

One of the difficulties for Austrian theorists of the firm is a general belief that spontaneous rule-bound orders are not hierarchical (Pongracic 2009, 92). This is not necessarily correct.

It is now generally agreed that rules are the foundation of coordinated behavior in animals (Hayek 1967, 66; Miller 2010, 175; Quera, Beltran, and Dolado 2010). With no leaders or external factors, order can emerge naturally from independent agents following common rules, the classic example being Reynolds's flocking 'boids' (Reynolds 1987; Miller 2010, 174). However, Reynold's simple computer program, where 'boids' following simple rules (fly at the same velocity as nearby birds, stay close to nearby birds, but avoid collisions) resulted in flocking-like behavior, has in some ways led us astray. As has Hayek's focus on spontaneous orders where unthinking objects, iron-filings etc., are the basis of spontaneous orders (Hayek 1973, 40, 43).

Recent research has shown that flocking and herding rules include taking cues from 'leaders' and decision-makers, such as more experienced homing pigeons (Flack et al. 2012). Leaders have been observed to emerge within flocks of pigeons: 'we found that stable, hierarchical pattern of in-flight leadership does not build upon the stable hierarchical social dominance structure evident in the same birds. Instead, in the case of pigeon flocks, the emergence of leadership and dominance hierarchies are each affected by different factors. By ignoring social dominance when in flight, flocks of pigeons potentially make better navigational decisions because leadership can emerge from relevant attributes, such as local experience and route fidelity' (Nagy et al. 2013). Even tiny stickleback fish exhibit differences in behavior which drives leadership which results in particular forms of emergent shoal behavior (Jolles et al. 2017).<sup>1</sup>

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<sup>1</sup> With an almost Austrian emphasis on the diversity of abilities, Jolles et al. write:

In recent years it has become apparent that across a wide range of animal taxa, individuals commonly differ consistently from one another in their behaviour ('animal personalities'), often with large fitness consequences and wide-ranging ecological and evolutionary implications. Such variations could provide a level of heterogeneity within animal groups that may drive

According to Biro, “every [homing] pigeon has their own opinion on how to get home” (Biro 2016). Every homing pigeon is obviously committed to getting home but they will be guided, to some degree, by more experienced pigeons, better navigators and, of course, staying in the flock has advantages that outweigh acceptable deviations from a preferred course home. But sometimes the leader is wrong and the other pigeons will ignore him or her (Watts et al. 2016). Further, the flock will not follow the same route home that the leader would follow if flying solo—showing that the leader is influenced by the flock (Pettit et al. 2015).

Hierarchy is also a natural feature of human spontaneous orders. In the market order, participants will be influenced by (or it could appear, “follow the commands” given by) other market participants like Warren Buffett. The anthropologist E.E. Evans-Pritchard described the Nuer in the Sudan in the 1930s; he noted that their society was extremely egalitarian but that forms of hierarchy also existed:

The ordered anarchy in which they live accords well with their character, for it is impossible to live among Nuer and conceive of rulers ruling over them.... Wealth makes no difference... Birth makes no difference... [But] The words of some elders count for more than the words of others... Leadership in a local community consists of an influential man deciding to do something and the people of other hamlets following suit at their convenience” (Evans-Pritchard 1940, 179–81).

Another example would be the common-law legal system, an example given by Hayek of a spontaneous order (Hayek 1973, 81, 86). Here, again, hierarchy naturally emerges, with judges making decisions at various levels until there was an ultimate arbiter at the apex of this hierarchy—a king, a group of bishops and now supreme courts.

It is therefore not inconsistent even with pure spontaneous orders for there to be a hierarchical element. This hierarchical element

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collective behaviour. Indeed recent studies have started to provide support for that notion and have shown that consistent behavioural differences can influence leadership, social network structure, collective dynamics and group performance.... Relatively simple interaction rules play an important role in the emergence of collective behaviour.... (Jolles et al. 2017)

may also be a feature of the larger market order but in a much less visible way. We may not feel that Warren Buffett is our superior, but we may avidly read his annual letter to investors and follow his advice just the same; we may not have a 'boss' in our market based activities but we may be a slave of some market or trend influencer, the economics of Snapchat or Instagram may have made this much clearer to us all. This also makes clearer how entrepreneurs play a leadership role, in, in Kirzner's phrase (p. 18), the "mutual learning" that is the essence of the market process.

Further, we embed ourselves in the rules of different rule-based orders all the time, as employees, as customers, as suppliers and owners. For example, we will behave quite differently in a fast-food restaurant than in a fancy expensive one; we would not dream of clearing our own table in a white-linen restaurant but would 'automatically' in a burger joint. This is not us accepting 'commands' from a hierarchy, we have not fleetingly become employees as we empty our tray, but evidence of our innate ability to switch from one set of rules to another usually without conscious effort. The *maitre d'* may tell us what wine goes with what dish but we do not follow his or her commands, we bow to his or her superior knowledge of fine dining.

This is not a command hierarchy; this is not a hierarchy with commands cascading down but individuals happy to be guided by the advice, decisions or actions of others, however, inarticulately barked out (Brady and Walsh 2008). This does not mean that individuals can not try to give a command, after all what is the point of humans being able to speak if we cannot shout instructions at each other? However, just because we can shout, does not necessarily mean that what we shout is an order or a command. As Mary Parker Follett put it: "I may say to an employee, 'Do so and so,' but I should say it only because we have both agreed, openly or tacitly, that that which I am ordering done is the best thing to be done. The order is then a symbol" (Follett 1941, 65)<sup>2</sup> We can say the same of Coase's

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<sup>2</sup> See Kline and Martin (1958) and Pongracic (2009, pp. 38, 39) for further examples. Kline and Martin (1958) is particularly interesting. Hayek quotes from it in *The Constitution of Liberty* (1960, 427, n. 10) but only in relation to the loss of knowledge in relation to command. He makes no reference to the article's use of rules as the solution to the knowledge problem of authority. Indeed, it is not until the early 1960s that he publishes works specifically on rules and rule-following (outside of

seminal ‘order’ that an employee should move from Department X to Department Y: is that a command or merely an inarticulate expression of the rule, if there is not enough work in Department X at any particular point in time then go to Department Y?<sup>3</sup>

This insight, that hierarchy emerges naturally from rule-following within a group as individuals look to others with more experience, skills, more or better knowledge or information and better knowledge of the rules, has major implications for theories of the firm. Conventional theories of the firm are largely focused on this visible hierarchy and this has allowed them to starkly contrast the firm with the larger market order. Williamson in his

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his prior interest in the rule of law) as decision and coordination mechanisms. The article may have been part, if uncited, of Hayek’s realization of rules and rule-following as the basis for the classification system articulated in *The Sensory Order* that was then recast in rule terms in his writings in the 1960s (Hayek 1967, 43ff; Caldwell 2004, 296, 306, 307).

<sup>3</sup> Once we see that hierarchy is not inconsistent with rule-following, our eyes are opened to the possibility that many ‘orders’ that cascade down that hierarchy may not be commands at all; many instructions that individuals consider to be commands may be merely the articulation of a rule. Simon’s (1991) example, “repair this hinge,” can be rearticulated as a rule, (“If a hinge is broken, repair it”) and a piece of information (“This hinge is broken”). Coase’s example of a command (Coase 1988, 35), an employee moving from department Y to department X “because he is ordered to do so,” can be reinterpreted as a rule: if Department Y is quiet then move to Department X (Schlicht 1998, 222). Therefore, when there is an articulation of a rule or a piece of information (“Repair that hinge!”) and the rule is followed, it can appear that this demonstrates the power of the command and of the commander. We recall that Hayek originally argued that very specific rules could end up being close (“shade gradually into”) to command (Hayek 1960, 114, 148; Vanberg 1994, 266, n. 14). However, while this might look like the position when a command is compared to an isolated application of a rule (repair that hinge!) that *cannot* be the case generally: even the most specific rule like “if a room is dark, turn on the light,” informs every situation where one is in a dark room and also allows for unexpected situations like there is no electricity and the light switch does not work and you could use your mobile phone as a light. This is completely different from a command: Turn on that light! This tells you nothing about any other room, any other light, or any other situation. You can disprove there is command in organizations by asking yourself if you told someone to move from Department Y to Department X and on some other day, when circumstances were similar, you saw the person in Department Y and they said they were only there because noone had told them to go to Department X. You would be annoyed. Why? If they failed to follow a clearly articulated rule you would be right to be annoyed; if they were waiting until someone told them what to do then you should congratulate them on their understanding of the theoretical basis of intra-firm coordination.

Nobel Memorial Prize-winning speech made this point explicitly contrasting the hierarchical firm with “spontaneous adaptations” in the market (Williamson 2009). In conventional theories of the firm, individuals in authority do not, obviously, have coercive power—they cannot kill or imprison you if you do not follow orders. But they are thought to have power because leaders in organizations have control over the resources of the firm (Roberts 2004, 103). However, this argument is obviously circular and cannot explain how individuals lose power, how CEOs end up being sacked; in fact, Turner argues that causation is the exact opposite, individuals get control of resources because the group has conferred power on them (Turner 2005).

What we see when we look at our pigeons flying home is a powerful vindication of the early management theorist, Mary Parker Follett. Follett argued that there is no command within organization just individuals following the “law of the situation.” She wrote: “The leader gets an order followed first, because men do really want to do things in the right way and he can show them that way, and secondly, because he too is obeying” (Follett 1941, 276). This seems so counterintuitive when we look at leaders in organizations barking out orders. But when we look at our pigeons flying in a coordinate flock, we cannot hear any commands, we cannot see any gestures, no pigeon has control of resources or any property at all but we do see hierarchy and leadership. But if we have discounted hierarchy in natural spontaneous orders because the leadership is largely invisible, have we over-privileged hierarchy in firms where leadership seems so visible and where the ability to secure coordination through being able to give orders and commands seems so clear?

This focus on hierarchy and the logical flaws in coordination through command and orders has been central to a dispute within Austrian theorists of the firm. We will explore this next.

## **2. The illusory conflict within Austrian theories of the firm.**

In this section, we look at Austrian, effectively Hayekian influenced, theories of the firm. Hayek’s starting point was to look at the difference between a command and a rule. A command “aims

at a particular result or particular foreseen results, and together with the particular circumstances known to him who issues or receives the command will determine a particular action" (Hayek 1976, 14); a command, by definition, must not be in accordance with the rules, otherwise the 'command' is merely rule articulation. Coase's example given above meets Hayek's definition of command. Hayek contrasts a command with a rule. He suggests that a rule "merely states certain attributes which any such action ought to possess" (Hayek 1976, 14). For example: "If {condition/situation} A, do B" is a rule (Becker, 2004) as is "If A, B is forbidden." The complexity of the rules is somewhat overlooked in the simplicity of each individual rule; if A do B but if A1 do B1 or if A2 then do B2 can often require quite subtle thinking as to discover the correct situation, the correct rule or priorities of rules and to articulate the rule or the consequent action (Hayek 1967, 57).

Hayek's key insight into the knowledge problem of central planning (Hayek 1948, 33ff) was the starting point for much of his later work on how the market order solved this knowledge problem. As is well known, Hayek argued that rules and rule-following behavior provided for the solution; rules are used by individuals to make decisions despite their constitutional ignorance, and the larger market order is a spontaneous order created by individuals following common rules.

On the other hand, Hayek considered that organizations (*taxis* in Hayek's phrasing), as opposed to markets (*cosmos*), were coordinated by commands, but that there was also a role for rule-following. However, Hayek said that these rules of organization were a particular type of rule—rules, allowing the organization member to use some element of their knowledge, for the performance of assigned tasks to fill in the gaps in commands (Hayek 1973, 49; Vanberg 1994, 114). Generally, Austrian students of the firm are now agreed that Hayek, who "had little interest in organizations" (Foss and Klein, 2013), made unnecessary distinctions (with the larger market order) when he argued that organizations had to have a concrete goal<sup>4</sup> (Vanberg 1994, 142) and where he argued that the

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<sup>4</sup> In some cases at least it may be an example of the *post hoc ergo propter hoc* fallacy applied to the theory of the firm. Barnard, himself, gave an example of this in a letter of 6 January 1956 to Hayek:



rules were necessarily subordinate to the command in an organization—in fact the opposite may have to be true (Ioannidis 2003a).

Despite this, Austrian economists have sought to apply Hayek's knowledge problem and its solution to internal coordination within the firm. And the more recent Austrian focus on entrepreneurship and uncertainty has given us real insight into the limitations in the knowledge of entrepreneurs and managers; there is a knowledge problem not just within the larger market order but also within firms. Ioannides writes: "...the promotion of the entrepreneur's business conception requires the information absorption capacity, the creativity and the problem solving capability of firm members. All these capabilities presuppose that the individual member acts within a framework of sufficiently abstract rules ... In other words, the firm cannot but, at the same time, must not operate on the basis of commands" (Ioannides 2003b). "Cognitive constraints prevent the entrepreneur, as much as anyone else, from imaging all possible moves that unfold in the future" (Witt 2007).

However, despite these commonalities in the Austrian literature on the firm, there are now two quite different lines of thought on the role of hierarchy in intra-firm coordination: one line, taking a realistic view of the internal workings of the firm, notes the universal existence of hierarchies within firms and argues that this must result for some role for 'command' within the firm (Foss and Klein, 2013); we can call this the 'realism' line of thought. The other line focuses on the knowledge problem in any kind of central direction and proposes

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Based upon my experience and observation I had arrived at conclusions consistent with yours before I had read any of your work or had heard of Michael Polanyi whose analysis of the situation [in *The Logic of Liberty*], I think, is correct and very valuable, but it is not sufficient. It seems to me that one has to be able to explain the illusion of successful planning.... In this city [New York] and its environment, in which there are millions of telephones, it is possible with almost complete certainty to make anyone of millions of possible connections merely by dialling correctly. The extreme degree of coordination of electrical and mechanical details to make this possible is almost incredible and an enormous amount of engineering work has gone into it and there is a blue print for nearly inch of the property concerned. It certainly looks as if the system as a whole has been meticulously planned to be what it is [by the New York Telephone Company]. Yet, this is absolutely false, as a whole it never was and never could have been planned (Barnard, F.A. Hayek papers, 1956).

market-process type solutions like rule-following; we can call this the ‘logical’ Austrian line of thinking on the firm (Langlois 1995).

The realism line argues that rule-following is an important coordination mechanism within the firm, but that this does not affect the essential role of authority, hierarchy (Sautet 2000, 98) and the ability to give ‘orders’ and ‘commands’: that managers can get things done by merely telling people to do it. This line in the literature argues that the role of rules fluctuates in line with the degree of uncertainty and the amount of knowledge of the employees that must be used—the paradigm example being a new entrepreneurial firm with knowledgeable employees and a boss with cognitive and knowledge limits (Ioannidis 2003a, Witt 2007).

But despite what should be a natural antipathy to ‘command’, the Austrian perspective on the firm constantly returns to the obvious existence of hierarchy and, as they take it, its inevitable consequent coordination mechanism: command. Foss and Klein argue that command is essential to firm purpose. While they note that “knowledge causes authority (as a centralized decision-making system) to fail in all its forms” (Grandori 2002) they also write that: “consistent (or heavy-handed) application of Hayek’s decentralized argument leads to an apparent absurdity: if decentralization always and everywhere improves the utilization of dispersed knowledge, it would be hard to find any rooms [sic] for firms, and certainly for contemporary mega-sized firms... Yet (large) firms exist” (Foss and Klein 2013). Pongracic makes the same point: “...it should be obvious that most successful firms engage in some form of command-and-control, hierarchical operations. It seems highly unlikely that all these multitudes of entrepreneurs have been doing it wrong all along!” (Pongracic, 2009, p. 43).

The overall result of this stream in the literature is that the business firm is a “hybrid Hayekian order” (Ioannidis 2003a)—partly coordinated by rules and partly by command (in Hayekian terminology, neither a ‘cosmos’ nor a ‘taxis’)—with the mechanism mix fluctuating from firm to firm. Unfortunately, and paradoxically, as Pongracic has noted (2009, 72ff), this point that firms do not or should not emulate the larger market order, has morphed into an Austrian emphasis on the importance of hierarchy, authority and command (Cowen and Parker 1997, 75).

The second line of thought, building up logically from Austrian insights into market processes, also looks to rule following but is more sceptical of the power or abilities of hierarchy. The most direct application of that thinking is to argue that markets should be brought within the firm to solve the inherent knowledge problem with intra-firm coordination (Cowen and Parker 1997, Koch 2007). But if the problem was that simple to solve, why would firms have emerged at all? And, sure enough, we find, within for example the Koch companies which apply this market-process approach, all kinds of rules, like formal “decision rights” (Koch 2007, 126), that do not exist in that way within the market order.

Langlois argues that firms cannot plan in the conventional sense but instead must emulate to some degree a spontaneous order (Langlois 1995). Langlois draws on business history to demonstrate that firms move, in some form of coordinated way, from business to business without, inevitably given cognitive constraints and uncertainty, having a clear idea what they are doing but still being able to do it. But Langlois’s solution of firms relying on abstract rules to navigate this uncertain future also resulted in Langlois being “sceptical of hierarchy.” More recently Bylund (2016) takes a similar market process approach and comes to an even stronger conclusion: “we commonly perceive the firm as a hierarchy and that we as employees ‘follow orders’ from higher-ups in the workplace. But this perception is unfounded.... There is no reason to perceive of the firm as a hierarchy. Indeed we find no basis for authority....” (Bylund 2016, 88, 95).

Emerging in the Austrian literature of the firm are two different approaches to the firm—the logical approach that relies on the market process and denies that an authority relationship can exist, or is even desirable, and a realism school that argues that hierarchies are an observable feature of firms and so must have some function.

However, it is possible to square this logical-realism circle. If we appreciate that hierarchy can be a feature of rule-following orders, in fact that hierarchy can emerge naturally within any group of sentient rule-following agents, then we can see how an Austrian focus on rules, rule-following, uncertainty and cognitive constraints can be consistent with hierarchy. Especially, when we appreciate Follett’s point that many articulated commands or orders may be merely rule articulation.

On the other hand there is no need for acute observers of the firm like Langlois, to be “sceptical” of authority or hierarchy. The power of a spontaneous order to deal with the Hayekian knowledge-problem is not diluted by a hierarchical element that, in fact, may be an emergent feature of all spontaneous orders created by sentient agents following common rules.

### 3. Rules and conventional theories of the firm.

This insight in allowing us to integrate the different schools with the Austrian literature on the firm, by allowing for hierarchy to emerge naturally as a consequence of rule-following, also allows us to integrate the Austrian focus on rule-following with the more conventional literature on the firm as well.

Rules have become more central in general discussions about decision-making. In *Risk, Uncertainty and Profit*, Frank Knight noted that we all act in an environment of change and uncertainty: the problem of life is that we know so little and yet we manage to act. He argued that the manager in a business firm solves this problem through a process of ‘trained instinct’, ‘judgment’ or ‘intuition’ (Knight, 1921, pp. 211, 223); in other words he knew these decisions were made but had very little idea how they were made. Modern research in psychology and economics on how individuals make decisions has given us insights into the foundation of that ‘intuition’. We now know that individuals make judgments and decisions, not by elaborately generating and ranking options, but by following ‘heuristics’ i.e. rules. It is clear that this is also true for decisions made within business organizations. According to Kahneman, ‘[w]hatever else it produces, an organization is a factory that manufactures judgments and decisions’ (Kahneman, 2011, p. 418).

So we would expect the entrepreneur to attempt to coordinate through rule-following; articulated as such or not. An example of one entrepreneur using rules is when Henry Ford started the process of creating his “universal car;” he was trying to coordinate the activities of a number of individuals but without being able to articulate any concrete objective: “The plan which I then had in the back of my head but to which were then [1904] not sufficiently advanced to give expression....” (Ford and Crowther 1923, 56, 57).

But even at that early stage Ford could articulate clear rules, from which the design of his car, he hoped but could not be sure, would emerge: "The universal car had to have these attributes: (1) Quality in material to give service in use; (2) Simplicity in operation—because the masses are not mechanics; (3) Power in sufficient quantity... (4) Absolute reliability...."

However, these insights into the power of rule-following have been missed because the emphasis on rule-following in the conventional literature on the firm had a different starting point and so a different focus. Max Weber in his writings about bureaucracy, and the rules that bureaucrats followed, wrote about the "regular," "stable," "methodical" characteristics of the modern bureaucracy (Weber 1968, 956). This early focus on rules in organizational studies has skewed the understanding of rules and rule-following in organizational theory and economic theories of the firm which have become focused on rules in routine situations (Becker 2004, Nelson and Winter 1982); 'rules' became synonymous with 'rigidity.'

However, despite the "tendency for authors to slide between 'rules' and 'routines'" (Loasby 2000), rules, more recent studies have shown, can also guide decisions in non-routine, novel or uncertain situations also (Gigerenzer and Gassmaier 2011, Gigerenzer 2007, Klein 1998, March 1997). Again, the conventional view has been inverted—it is following rules that provides for flexibility and following commands that is necessarily rigid. That rule-following allows for fast decision-making and that these quick decisions can be useful is a new development (Kahneman 2011). Eisenhardt and Sull (2001) make the point that rules are an appropriate coordination mechanism in "rapidly changing, ambiguous markets" where strategies are "constantly evolving." Looking at actual company strategies, and without referring to any underlying theory or to management history, the authors had noticed the pervasiveness of rules in strategy formulation, articulation, and coordination.<sup>5</sup>

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<sup>5</sup> What is less well-known is recourse by the military to similar rules-based instruction. Arrow argued that (Arrow 1974, 68): 'The purest exemplar of the value of authority is the military.... Under conditions of widely dispersed information and the need for speed in decisions, authoritative control at the tactical level is essential for success' (p. 69). And that putting in place rules for every eventuality is "highly costly." This is a point repeated most recently by Foss and Klein (2012, 216).

If we take these insights into rule-following within the firm and apply them to existing theories of the firm we can see that many are writing about rule-following but, as with Knight, are struggling to articulate their insights in a clear way. Many existing theories are based on rules and rule-following behavior: routines (which are just rules to deal with regularly occurring situations) (Becker 2004, Nelson and Winter 1982), capabilities (the ability to make

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Contrary to expectations, the military and other military-like organizations such as the fire services, police and coast guard, do not rely on command even in non-routine circumstances (Klein 1998); even though senior military figures have the ultimate coercive power to make their soldiers do exactly what they want, they do not use it. These are the orders that the great Prussian general Moltke made at the outset of Prussia's war with Austria in 1866 to the commanders of Prussia's First and Second Armies, who within weeks would crush the Austrian army between them:

.... With regards to distance, road connections and railroad, the direction [i.e. not a specific location] of Gitschin has been designated for eventual junction of both armies.

By this it is not of course meant that the point must be reached under any and all circumstances, because that will depend entirely on the course of events ... [However] the convergence of all our armies for the main decision must always be kept in view (Moltke 1993, 245).

Moltke's orders can be easily expressed as rules: if there is a choice over direction, then choose the direction of Gitschin; if there is a choice between convergence and divergence with the other Army, then choose convergence; if there is a choice between direction and convergence, then choose convergence. (Note how there is no concrete goal.) The German army's Field Service Regulations, dating back at least as far as 1887 (Samuels 2013) are almost Hayekian: "Every individual from the highest commander to the lowest private must always remember that inaction and neglect of opportunities will warrant more severe censure than an error of judgement in the action taken" (Halder et al. 1953, 7, 8; Crevelde 1982). Articulated orders in this system were designed to give context and decision support premises to each individual soldier, so that when faced with the unexpected they knew what to do in a way that was coordinated with the rest of the soldiers in the army (Bungay 2011). This is the basis of current US Army military doctrine (United States Command and General Staff College 2014, 54). In developing his theories Hayek himself may have drawn on his own military experience: "his experience of the retreat [with the Austrian Army from the Piave River in Italy in 1918] first got Hayek thinking about spontaneous orders—the soldiers had no central direction, yet the retreat was more or less orderly" (Caldwell 2004, 135 n. 3; Leube 2003). This, of course, we now realize does not mean that the groups of men and boys were without leadership, there must have been individuals who had more local knowledge, better ability to find food etc. who would have emerged in the retreat.

superior coordinated decisions, i.e., rule-following) (Loasby 1998), contractual relationships (that is, rule-bound relationships) with incentives for and monitoring of adherence to the rules (Alchian and Demsetz 1972), even hierarchies and authority (Williamson 2009, Coase 1988) (See Walker [2015] for a useful review).

But each theory has to introduce an artificial element that could be seen to fall away if a greater emphasis was given to rule-following. For example, if we look at Alchian and Demsetz's paper, their logic, as Austrian writers on the firm have repeatedly pointed out, is impeccable: the employment relationship is just another market transaction, the employer has no more ability to 'command' the employee than the customer his or her grocer. However, to give their insight more realism, the authors introduced a centralized element:

... a special class of contracts.... Instead of multilateral contracts among all the joint inputs' owners, a central common party to a set of bilateral contracts facilitates efficient organization of the joint inputs [sic] in team production.... We conclude with a highly conjectural but possibly significant interpretation... the firm can be considered a privately owned market....

They talk of the firm as a form of "specialised surrogate for a market" at the center of a nexus of contractual relationships with the firm as the central contractual hub. Rearticulating that description of the firm as a unique rule-bound order, with employees committing to following the rules, and agreeing to being sanctioned or excluded if they fail to follow them, eliminates the cumbersome, and completely artificial, requirement to have a complex system of ever-changing contractual relationships with a legal fiction as nexus. The requirement is now merely to follow different rules to the larger market order. This goes to the core of their analogy between the employee/employer relationship and the customer/grocer: as you wander around the grocery store looking for tins of tuna, you do not have, yet, any contractual relationship with your grocer—you have a market order in which you both will follow rules and within which you can predict each other's behavior. Similarly, within a firm, the employees do not need a contractual relationship with each other or with a common artificial nexus. All they need are common rules and a mutual commitment to follow them. At the same time, the emergent feature of hierarchy within rule-following



orders allows us to answer the most common criticism of Alchian and Demsetz's article that there is a hierarchy within the firm but none in the larger market order. As we have pointed out rule-following within the larger market order and identical coordination mechanisms within the firm may result in more visible hierarchies in the latter than in the former but the mechanism is still the same.

Alghion and Tirole (1997) give a realistic view of the firm where decisions are delegated but they can only see this delegation as involving "a costly loss of control for" the superior. And they have no mechanism to explain how delegated decision can be coordinated; they very much imply they cannot and so only "relatively unimportant" decisions can be delegated. Again, a rule-following perspective from the Austrian literature would show how delegation exists within a hierarchy, both the hierarchy and the delegation are natural consequences of rule following, and how rule-following results in actions that can still be controlled and coordinated even in urgent and unforeseen circumstances.

#### 4. Rules and 'Culture'

Hayek's work on rules was an early example of an increasing focus on rule following in human behavior and coordination. It has become clear that rules are central to all human activities. Dopfer writes that "Homo sapiens can thus be viewed more generally as a rule-making and rule-using animal" (Dopfer 2004). But rules and rule-following are especially important in institutional settings. Social institutions are "nothing more than agents rationally following rules of action, and being believed by other agents to do so" (Rowe 1989, 5). Other authors note the usefulness of rules in coordinating behavior generally (Heiner 1983) and specifically within firms (Grant 1996). However, in many ways the conventional literature on firms and management is merely catching up earlier theorists, like Follett, and practitioners, like Henry Ford.

A neglected subject, however, is the interaction of rules with 'orders' and 'commands' in an institutional setting. A command is, by definition (Hayek 1973, 97, 99; Vanberg 1994, 129; Polanyi 1951, 141; Hayek 1976, 20), outside of any rule-system. If we return to Coase's example of a command: an employee is told to move from



Department Y to Department X because “he is ordered to do so.” The employee must think: is this a command or a rule (Schlicht 1998, 232)? Do I go to Department X just this once or every time or times when the factual situation is similar (like there is no work to do in Department X)? Without such clarification, there is a risk that an employee mistakes a rule for a command or vice versa—i.e. repeatedly carrying out an action where the original instruction was actually a once-off command but the employee thought it was rule-articulation. This is not a source of error that is identified or discussed in the literature, or even much in real life. Why is that? Perhaps because rule following and its hierarchical consequences are more pervasive than we thought?

Chester Barnard noted an “authority paradox” within organizations: activity is coordinated within firms even though we do not do as we are told. In Barnard’s words, “It is surprising how much that in theory is authoritative, in the best of organizations lacks authority—or, in plain language, how generally orders are disobeyed” (1938, 161, 162). However, understanding rules as the coordination mechanism within the firm easily allows us to resolve this paradox, as Barnard did: ‘orders’ are not followed where they conflict with the rules (maybe the wrong rule was articulated or maybe circumstances have changed and a different rule should be applied now), and thus, despite orders being disobeyed there is no loss of coordination. In fact, coordination is sustained only because ‘orders’ are disobeyed and this is why, as Barnard pointed out, “... obvious disobedience [is] carefully disregarded” (p. 162).

This feature of corporate life, that things continue in their own way despite the frantic efforts of senior management, is often identified as ‘corporate culture’; Hayek defined ‘culture’ as “the rules of conduct which govern the structure and functioning” of groups of people (Hayek 1978, 156)—“the brain is an organ enabling us to absorb but not to design culture.” What is now clear to everyone is that every company has its own unique corporate culture; in Schlicht’s vivid phrase: “Anthropologists may travel from island to island and observe that each harbours people with a particular custom. It is not necessary to go that far away, however. In modern economics, each firm forms an island of custom in the ocean of the market” (Schlicht 1998, 207). And the number of potential islands appears to be almost infinite; Vanberg (1994, 78) points out: the

“cultural rules ... appear to be exceptionally variable and it is the variability of these rules that accounts for the diversity of social orders.” We can thus explain why there can be an infinite number of different ‘corporate cultures’ in the larger market order, but what is not so clear is: what problem is that solving and what value does a firm extract from having a different culture to every other firm?

In much of management literature this culture thwarts and frustrates the efforts of leaders and management; Roberts refers to it as an “inert” element (2004, 28). What is also clear is that this culture is not completely ‘created’ by the firm founder or leading entrepreneur; even in the smallest firms, of only two or three people, the founder can feel that “control... slips away” (Ruef 2010); as early as 1980 Apple was making decisions that Steve Wozniak, one of the founders, did not understand or “like one bit” (Wozniak and Smith 2006, 230). A firm is not a “designed order;” as Ruef has pointed out: “Entrepreneurs... are defined by their intention to form a social group” (Ruef 2010, 7). Any social group is beyond the ability of any one person to create or concretely manipulate (Hayek 1952, 71).

The firm retains coordination, despite ‘orders’ being disobeyed and despite control, even knowledge of the current rules, slipping away from the founders, because the rules of the order are being adhered to—or as it is put colloquially, “culture eats strategy for breakfast”! (Groysberg, Price, Lee, and Cheng 2018).

However, the purpose of this article is to argue that this culture is not a by-product or even an unfortunate complication of firm creation but instead may be regarded as the essence of the firm—the rule-bound order, the ‘culture’ in other words, is the firm and that those rules, that culture, is different from every other firm is both inevitable and potentially valuable. The basic premise of anthropology is that every culture sees the world in a different way; in the words of Engelke, anthropology is “a way of seeing things, a way of thinking. Culture is a way of making sense” (Engelke 2017, 31, 32). Within organizations, culture has been defined as having a coordination role: the “social or normative glue that holds an organization together” (Smircich 1983), and a decision-making role, as Casson has pointed out: “‘Learning by doing’ is an important aspect of problem solving and so learning effects will give each culture a distinctive type of problem-solving expertise” (Casson 1995, 89). In

other words, we have described rules following in terms of 'If A, then B' but the rules also tell you which 'A' to pay attention to in the infinite number of potential problems that might be solved.

Perhaps an example may help. Steve Wozniak designed the Apple I and the Apple II and was clear on this from the start that he wanted to build a cheap computer. He worked as an employee of HP when he designed those computers—yet he did not feel he was competing with HP's personal computer "[i]t wasn't like ours—it was aimed at scientists and engineers and it was really expensive.... How could HP [build a cheap computer]? It couldn't" (Wozniak and Smith 2006, 175, 176). He founded Apple Computers in 1975 with Steve Jobs and Ron Wayne and but even Wozniak initially thought of his machine of hobbyists and not for "regular people in regular homes"—this came later (p. 197).

In late 1979 Steve Jobs was given access to the Xerox research center, PARC. During that tour, an engineer, Larry Tesler, gave him a demonstration of a 'mouse' and a graphical user interface. Malcolm Gladwell describes what happened: "Tesler recalled. "He was very excited. Then, when he began seeing the things I could do onscreen, he watched for about a minute and started jumping around the room, shouting, 'Why aren't you doing anything with this? This is the greatest thing. This is revolutionary!'" (Gladwell 2011). It is one of the most celebrated moments in modern business history and Xerox is widely derided for not having exploited this intellectual property and instead, effectively, giving it away to Apple. But, as Gladwell points out, Xerox and Apple saw the problem in different ways: "PARC was building a personal computer. Apple wanted to build a *popular* computer."

What was obvious to Jobs and employees in Apple was not at all obvious to employees in Xerox or HP; as Yu points out rules facilitate decision-making by limiting our choices (Yu 2005, 9)—for Xerox or HP, building a consumer or popular product was not within its realm of choices. For an employee in Xerox, focused on business customers, a mouse was a way of making technicians more efficient; for Jobs and other individuals in Apple it was a way of making everyone a computer technician; the same A but for Apple—If A then B and for Xerox If A then C. Apple in 2018 reached a market value of over \$1 trillion but Xerox still has a market

capitalization of over \$6 billion; with different rules Xerox might have a different market capitalization, but the service it currently provides in the larger market order would not be provided in the same way, if at all. Seen in this light, we can see how the larger market order expands its problem-solving abilities as different rule-bound orders are created within it and how these rule-bound orders create value for customers, employees and investors. The rule in the market order may be: If A then B; the rule in other orders may be: If A then C, D, E, etc. It may be that the market throws up numerous failed orders before we get to set of rules that provide: If A then Z; this then solves a problem in a way that customers really appreciate and will pay for.

## 5. Tentative conclusions

In this article we have repeated the, now commonplace, assertion that rule-following behavior occurs within organizations in both routine and non-routine, even unforeseen, situations. More novel, we have shown that the existence of rules and rule-following behavior can co-exist with hierarchy; that hierarchy can emerge naturally in groups following common rules.<sup>6</sup> This may allow for a greater role for rule-following within the firm. However, nothing in this theory prevents firms from having a dual nature, being coordinated by command as well rule-following; a hierarchy, once in place, may achieve coordination using many different mechanisms—commands, goals, rules.

Beyond Hayek's insight into the division of knowledge in the larger market order and, by implication, within firms, Austrian

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<sup>6</sup> This may also allow us to take a further step to resolving a controversy between Hayek and some of his critics. Both Rothbard (2009, 62) and Bruno Leoni (Leoni 1961, 99, 110; Hayek 1973, 168) criticized Hayek for his failure to distinguish between rules voluntarily committed to and rules imposed by a coercive authority. The conventional economic view has been to use the firm as an exemplar of the power of 'command'—perhaps the exact opposite is the case? If this were correct, the apparent tremendously effective coordinating power of 'command' in the firm would be seen as something different and there would be a different focus on the power of voluntary coordination in the larger market order. Or as Mary Parker Follett wrote of her insights into the law of the situation: "This gives, does it not, a slightly different aspect to the whole of business administration through the entire plant?" (Follett 1941, 59)

insights into the firm have been relatively limited. It is submitted that this is because Austrian theorists of the firm have, following Hayek's lead, conflated hierarchy with coordination by 'command.' This has led some Austrian theorists to dismiss hierarchy and others to under-privilege rule-following. The purpose of this article has been to attempt to return Austrian theories of the firm to a realistic, hierarchical, but rule-based theory of the firm.

It may be that Hayek's core insights into the tremendous power of spontaneous orders and rule-following may have more general application than he envisaged.<sup>7</sup> If so, Austrian insights into entrepreneurship, coordination and knowledge, have been under-appreciated in the conventional literature on the firm and management theory and practice.

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<sup>7</sup> Chester Barnard wrote to Mary Niles in a letter of 13 August 1956 after he had read her *The Essence of Management*:

I note one omission that surprises me. I did not find any quotation from Michael Polanyi nor is his name listed in the index, nor his writings in the bibliography. I think that his book *The Logic of Liberty* is one of the most important contributions to the theory of organization and management that I know, particularly relating to the limitations of the span of control and the necessity for autonomous behaviour in most organizations. If you don't know the book I can certainly recommend it most highly.' (Barnard 1956)

These late letters of Chester Barnard, to Hayek, Polanyi, de Jouvenal, etc., essentially restating firms as Polanyi-ish spontaneous orders are a hitherto un-investigated alternative to the Williamson explicit contrast between Barnardian hierarchical firms and Hayekian spontaneous orders (Williamson 2009).

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# OVER THE CLIFF: HOW BRAZIL'S 2004–2016 BUSINESS CYCLE BECAME ITS WORST RECESSION IN A CENTURY

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JEL CLASSIFICATION: E14, E21, E31, E32, E51, E52

**ABSTRACT:** This paper analyzes Brazil's 2004–16 business cycle, which subsumes what is now regarded as the nation's most severe macroeconomic recession in more than a century. During the steep recession, which stretched over more than two years, national production at one point fell 3.8 percent per annum while the unemployment rate rose from 4.6 to as high as 11.9 percent. This study, after delineating its methodology, examines the behavior of different Brazilian macroeconomic aggregates during the cycle. These aggregates include GDP, the money supply, interest rates, savings, industrial production of higher- and lower-order goods, and inflation. Also examined are the Brazilian government's interventions that rearranged Brazil's structure of production and ignited an unsustainable boom, the role of price controls in prolonging economic recovery, and the recovery *per se* using the theoretical lens of the Austrian-adjustment process. Finally, empirical data from the recent Brazilian cycle will be analyzed in light of the predictions of Austrian business cycle theory (ABCT). The data were found overall to support the theory.

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## I. INTRODUCTION

It has long been recognized in Brazil that the nation's economy has tremendous difficulty sustaining long-term growth. Brazilian economists jokingly call this “the flight of the chicken,” referring to the fact that among birds, chickens are only capable of flying a maximum distance of a few hundred feet. In the same way, Brazil's economy typically enters a period of impressive-looking growth before this growth quickly gives way to crisis or stagnation. This has happened over and over again.

The central macroeconomic debate in Brazil has been about the real causes of the nation's lack of sustained growth. Motivated by this discussion, this article will deconstruct Brazil's latest economic boom and bust in light of Austrian business cycle theory (ABCT), using ABCT to explain the recent cycle's causes and why this period became yet another “flight of the chicken.”

The recent crisis carries a special meaning for Brazilians. It is the most severe recession since GDP measurement was introduced in Brazil in 1901. It persisted over two full and consecutive years, inflicting an annual decline in GDP of more than 3 percent.<sup>1</sup> In the boom, the unemployment rate fell to 4.6 percent before skyrocketing to 11.9 percent<sup>2</sup> during the bust. This was the most agonizing crisis for Brazilians in at least 115 years (Cury and Silveira 2017).

The most important features of ABCT were first introduced by Mises (2008, 2009), amended with lengthy contributions from Hayek (1931, 1933, 2008), Rothbard (2000, 2009), and Garrison (1978, 1997, 2001, 2004, 2012). Recently, another set of articles was published, each article making new contributions (Carilli and Dempster 2001, Evans and Baxendale 2008, Macovei 2015, Engelhardt 2012, Salerno 2012, Giménez Roche 2014). For Brazil's economy during the 2004–16 business cycle, data for all the macroeconomic variables relevant to ABCT have been obtained.

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<sup>1</sup> As the recession entered 2017, the authors ended their analysis for this study at December 2016. Subsequent sections in this article will provide deeper analysis of the data discussed in this paragraph.

<sup>2</sup> For these data, the authors used two different series because one was discontinued in February 2016. For the boom phase, the Central Bank of Brazil's (*Banco Central do Brasil*, BCB for short) series number is 10777. The series for the bust phase is 24369.

This article is divided into nine sections. After this brief introduction (section one), section two will introduce ABCT and its main theorists. Section three will explain the methodological aspects of this study while section four will deconstruct the recent Brazilian cycle into distinct phases for a better understanding of the whole. For the reader, this fourth section is key to interpreting and understanding data presented later in the article. Sections five and six will be dedicated to explaining in detail phase two (“reset” and the New Matrix boom) and phase three (bust) and how government intervention re-arranged Brazil’s structure of production. Section seven will analyze the inflation component of the business cycle and how government price controls postponed Brazil’s recovery. The eighth section will summarize all the results from the data and make some final observations. Finally, the last section (nine) will conclude this study.

## II. AUSTRIAN BUSINESS CYCLE THEORY (ABCT)

Economic transactions occur when individuals pursue their objectives (Mises 2008, 11). Every individual analyzes the costs and benefits of searching for information and gaining knowledge to achieve his or her goals (Mueller 2014). However, individuals do not possess all the information available in the economy. Each individual only retains the bits of knowledge that he or she uses for his or her own purposes (Hayek 1945).

Considering that economic transactions and knowledge are dispersed, it is difficult to conceive of how markets can act in synchrony over the long term. People have diverse goals and act in different ways. As a consequence, only small clusters of errors are theoretically possible, restricted to relatively few firms (Rothbard 2009, 17). It would be just about impossible for all firms in the entire economy to go bankrupt in unison. In other words, when business cycles—a boom followed by a bust—occur, it is rational to attribute an external variable as the force that is influencing individuals to engage in systemic entrepreneurial error (Rothbard 2000, 9). Hence, in an unhampered market a massive crisis will not be possible (Mises 2008, 562).

Instead of boom and bust, economic development aims for a more sustained growth model. To avoid creating cycles and systemic

economic instability, economic transactions must be built upon stronger foundations. There are three major sources of sustainable growth for an economy. The first is increasing levels of voluntary savings from individuals. When true voluntary savings are accumulated, consumer time preferences guide entrepreneurial action towards projects in alignment with consumer preferences (Manish and Powell 2014).

In the aggregate, extra savings reallocates capital that would have been spent on consumption to loanable-funds markets for investment projects (Garrison 1997). With an increase in the supply of loanable funds, the real interest rate falls and more capital projects are undertaken. Capital-intensive projects are very interest-rate sensitive. Many projects can become economically viable when capital becomes cheaper. When this happens, the structure of production changes to a more lengthy (Hayek 1936) and prolific (Hayek 2008) *modus operandi*. In the long run, the more productive investment in roundabout<sup>3</sup> methods of production will more than compensate for the fall in consumer prices as a consequence of less short-term consumption (Hayek 1931). When a nation invests in capital projects, its production-possibilities frontier is extended and this extension yields a more solid foundation for future growth (Garrison 2012).

When individuals in a nation have not saved enough such that interest rates in loanable-funds markets fall, external savings (foreign-direct investment) can be another route to sustainable growth (Mises 2006, 75). Foreign investors who have the savings to undertake capital projects can fill in the domestic gap in savings needed to initiate or maintain sustainable growth.

The other way to achieve sustainable growth is with more efficient methods of production and intangible capital (Young 2009a). Technology would certainly mean consuming less resources to produce more output, leading the economy to extend its production-possibilities frontier (Garrison 2012). Productivity can lead to sustainable growth because individuals can produce a larger quantity of output

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<sup>3</sup> This term is usually used in capital theory to denote a more capital-intensive method of production. Sometimes Hayek also used “capitalistic methods,” “roundaboutness,” or “roundabout methods of production.” These terms are synonymous (Hayek 2008).

with less input, which ultimately increases individuals' earnings. It is possible for entrepreneurs to engage in new capital projects while consumption is expanding (Mises 2008, 512–13).

Even if time preferences stay constant, with more productivity more money becomes available for entrepreneurs to engage in more projects, leading to sustainable economic growth (Young 2009a, Engelhardt 2009, Young 2009b). Despite the fact that sustainable growth can be created by increasing productivity, if time preferences are not lowered, entrepreneurial projects will encounter limits. In other words, for a longer and more productive structure of production, individuals' time preferences will have to be lowered (Salerno 2001, Cochran 2001). Higher productivity increases wealth, which in turn can motivate individuals to lower their time preferences (Block, Barnett, and Salerno 2006). However, it might be the case that individuals can spend all their extra earnings and continue to increase their time preferences. As a result, increased productivity can only lead to a fall in interest rates if individuals, with higher earnings, lower their time preferences. The decision by individuals to lower their time preferences after they become more productive is a function of each individual's preference, not a fact.

If individuals in a given society do not pursue goals that encourage greater savings and/or lower time preferences, stagnation and slow growth are the results. Changing these variables (savings/time preferences) in the direction that facilitates growth takes time and effort. If government intervenes in the form of shortcuts, the economy can be steered onto an unsustainable path (Garrison 2004). Government interventions can take myriad forms and stifle the economic development of a society (Mises 2011).

In terms of monetary policy, business cycles can be formed when government forces interest rates below their natural market level, stimulating artificial development of capital industries (Mises 2008). In addition, consumption will also be stimulated as individuals are incentivized to spend more and save less. When spending on both capital and consumption goods is stimulated by the government, a tug-of-war competition for scarce resources ensues (Garrison 2001).

The first phase of the cycle is the boom that is a result of the dual-stimulus spending on capital and consumer goods. A euphoria of prosperity will prevail (Mises 2011, 564). The new artificially lower

interest rate through credit expansion drives GDP growth. Capital and consumer projects are implemented, with the former being more sensitive to interest-rate manipulation and credit expansion. Thus, capital projects begin growing at a higher rate than consumer projects (Hayek 2008).

Eventually the economy does not have all the resources to complete all the projects that are being simultaneously pursued. On the one hand, qualified labor and land are scarce resources and simultaneous competition for them will lead to rising prices in the factors of production (Garrison 2001, 72). On the other hand, capital is also a scarce resource and, when purchased with newly created money, its price rises quickly as well (Mises 2008, 550).

As a consequence of this process, nominal interest rates eventually rise because of future real losses in the value of bank loans because of inflation.<sup>4</sup> The expected result is that capital goods will suffer disproportionately from the early reversal of this process (Mises 2008). In addition, the consumer-goods industry will also suffer from the decrease in the purchasing power of money imposed by inflation. A recession will follow and pessimistic expectations in the market will turn projects once deemed profitable into malinvestments (Rothbard 2009, Holcombe 2017). Banks will then tend to impose greater restrictions on lending because of negative expectations for the economy. The result is stagnation or a fall in credit expansion (Mises 2008, 565).

ABCT is concerned with artificially low interest rates driving not only malinvestment, but overconsumption in the inflationary boom portion of the business cycle (Mises 2008, Rothbard 2000, Hayek 2008). Its essence is the falsification of monetary calculation; it is not an overinvestment (“hydraulic”) theory of business cycles as misunderstood by a pantheon of mainstream macroeconomists from Paul Krugman and Brad DeLong to Tyler Cowen and Bryan Caplan (Salerno 2012).

When the inevitable macroeconomic bust arrives, a return to the old conditions begins through gradual market adjustments.

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<sup>4</sup> This will necessitate the addition of an inflation premium onto the real interest rate to compensate for the fall in the purchasing power of the currency unit. The sum of the real interest rate plus the inflation premium is the nominal interest rate.



The recession is the “healthy” phase in which the economy begins recovering if the government bows out. If the government does not cease its interventions, the recovery will stall and the recession will continue (Rothbard 2009). In summary, the recession phase is characterized by a fall in prices, a rise in the interest rate, consumer thrift, and slow sales for entrepreneurs.

### III. METHODOLOGY

Economic cycles occur within a period of time and in a specific geographic region. The recent cycle in Brazil occurred in three distinct phases, covering a period of approximately 13 years (2004–16) from boom to bust. GDP was used to provide a general measure of macroeconomic performance. If ABCT explains the boom and bust caused by a cluster of errors (Hülsmann 1998), then those errors will affect GDP positively and negatively during the business cycle. For that reason, the main criteria for distinguishing the cyclical phases were fluctuations in GDP, interest rates, credit expansion, industrial production of consumer and capital goods, and macroeconomic policy enacted by Brazil’s government.

After identifying the phases of the cycle, the macroeconomic variables of relevance were collated. They are as follows:

1. GDP
2. interest rate
3. money supply
4. credit expansion
5. savings
6. industrial production (higher-order stages)
7. industrial production (lower-order stages)
8. inflation

GDP of course provides a big picture view of when the crisis unfolded and why the recent cycle was the most severe in Brazil’s more-than-one-hundred years of history. It will be displayed on an annual basis. Obviously, it is expected to grow in the boom phase and fall in the bust phase.

The second variable, the real interest rate, is key for tracing credit expansion and how this expansion lead to an unsustainable boom. The expected results would be a fall in the interest rate during the boom and a rise during the bust. The third variable, Brazilian monetary aggregate M2, will track the changes in the Brazilian money supply.<sup>5</sup> We expect that this variable will grow during the boom and stagnate or decline in the bust. As for credit expansion, the fourth variable, the expected results are an expansion during the boom and a stagnation or decline during the bust.

As for nominal savings (fifth variable), there is no particular expectation about its direction in either the boom or bust phases. If there is an increase in its size during the boom, it must be less than that of artificial credit expansion.

For the sixth and seventh variables, as explained in the previous section, higher-order goods experience a higher rate of growth than lower-order goods during booms. When the bust arrives, higher-order goods production will decline at a higher rate than lower-order goods production. Capital (higher order) goods tend to have more volatile production levels than consumer (lower order) goods. In the nomenclature of statistics, capital-goods production levels have a higher standard deviation from the mean (Rothbard 2009, 19).

Finally, inflation (eighth variable) will tend to rise in the boom phase, since both capital and consumer goods are receiving major *stimuli*, and this in turn puts pressure on the prices of the factors of production. After first flowing into capital goods, new money raises demand downstream and eventually puts pressure on the prices of consumer goods (Hayek 2008). There must be an eventual reversal of the growth of inflation in the bust phase or a steep fall in it when adjustments instantiate into inflated prices.

Table 1 below is a summary of expected results in the variables during the boom and bust periods. As can be seen in the table, in some cases the theory does not predict any particular result.

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<sup>5</sup> In Brazil, M2 is defined as it is in the U.S.: currency (coins and bills) + demand deposits + traveler's checks + other checkable deposits + savings deposits + small time deposits + money-market mutual funds + some minor categories (Mankiw 2018, 324).

**Table 1. Expected Results (ABCT)**

Variable	Macro Tripod Boom or T-Boom (Phase 1)	Reset and New Economic Matrix Boom or M-Boom (Phase 2)	Bust (Phase 3)
1 GDP	Rises (Mises 2008, 610).		Falls (Mises 2008, 610).
2 Interest rate	Falls (Garrison 2001, 69).		Rises (Garrison 2001, 72).
3 Money supply	Rises (Haberler 1983, 9).		Levels out or falls (Haberler 1983, 9).
4 Credit	Rises (Mises 2008, 549).		Falls (Mises 2008, 565).
5 Savings	Stagnates, falls, or rises less than credit expansion (Garrison 2001, 70).*		No prediction.
6 Industrial production for higher orders	Rises more than lower orders (Rothbard 2009, 19–20).		Falls more than lower orders (Rothbard 2009, 19–20).
7 Industrial production for lower orders	Rises less than higher orders (Rothbard 2009, 19–20).		Falls less than higher orders (Rothbard 2009, 19–20).
8 Inflation	Rises (Mises 2008, 550).		Levels out or falls (Mises 2008, 566).

\* No explicit prediction for this was found in ABCT but was deduced from the theory of Garrison (2001) in which it is impossible to have growth in credit markets when savings falls except in the case of government intervention.

In later sections of this article, these results predicted by ABCT will be compared to the actual ones from the 2004–16 Brazilian cycle. The methodology used in this study does not involve an empirical test in the sense that hypotheses were formed and-or extraneous economic models were used to test ABCT (Hoppe 2007). The authors only wish to observe whether results consistent with ABCT occurred, assuming that no other exogenous variable(s) significantly influenced these results. Thus if a few of the observed results are not compatible with the theory, it does not necessarily mean that the theory has been refuted but rather that other variables not included in the present study may have affected the results.

Industrial production was disaggregated into specific sectors and how they behaved in the various phases of the cycle. These phases were categorized in light of the structure of production illustrated in Hayek's triangle (Hayek 2008). The more distant from consumer goods (higher orders), the more capital intensive and time consuming the process becomes. The opposite is also true: businesses closer to consumer goods (lower orders) are less capital intensive and less time consuming. Some industries are not clear cut. For example, the construction sector has characteristics of both orders: it is close to the consumer in some transactions, absorbs significant time and capital to produce certain products in other transactions, and is very interest-rate sensitive. On balance, this sector will be classified as higher order. The data used are from the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística*, or IBGE for short) and the Central Bank of Brazil (*Banco Central do Brasil*, or BCB for short). Both of these institutions in Brazil are (not surprisingly) government agencies. Their classifications were used and then macroeconomic sectors were designated as higher-, intermediary-, or lower-order as shown in Table 2 below.

**Table 2. Classification of Brazil's Industrial-Production Statistical Series\* by Their Location in the Brazilian Structure of Production**

Central Bank Series (21861-21868)	Location in Production Structure	Sector
21861	Higher order	Mineral
21868**	Higher order	Construction
21866	Higher order	Durables
21863	Higher order	Capital goods
21864	Intermediary	Intermediaries
21862	Intermediary	Transformation industry
21865	Lower order	Consumer
21867	Lower order	Semi- and non-durable goods
21859	-	General (all sectors together)

Source: BCB Industrial Production series 21861–68.

\* See methodological notes (Brazilian Institute of Geography and Statistics 2004).

\*\* This series became available in January 2012, therefore analysis will be limited.

Again, despite the fact that some authors have attempted to empirically test ABCT (e.g., Luther and Cohen 2014), this study will only analyze data in light of ABCT. The authors included changes in savings and interest rates in their criteria for defining the different phases of the cycle (Garrison 2006).

#### IV. THE BRAZILIAN EXPERIENCE

When President Lula took office in 2003, many supporters and opponents of his Workers Party (*Partido dos Trabalhadores*, or PT for short) were expecting that Lula would implement the agenda that PT had been preaching for several years. Since the 1990s, PT was mainly against “everything that was out there,” advocating market-unfriendly policies (Leitão 2011, 396 [authors’ translation]). With a radical-left mindset, members of the party and Brazilians in general thought that an agenda of economic intervention, such as debt default, would be enacted by the new president (Giambiagi et al. 2016, 198).

Markets were expecting a departure from the economic regime of Lula’s predecessor, Fernando Henrique Cardoso. The Cardoso

administration was in compliance with International Monetary Fund (IMF) recommendations and its economic policies were christened the Macroeconomic Tripod. The Tripod, per its name, was based on three major goals: fiscal austerity, inflation control, and a floating exchange rate (Veloso et al. 2013).

However, Lula unexpectedly embraced the Macro Tripod and continued with it in his first term, which ran from 2003 to 2006 (Amorim 2016, 28). Macro-economically, the year 2003 was very turbulent for Brazil because markets were expecting an abandonment of the Tripod. The following year, 2004, is when the first continuous boom of the cycle began.

Suggested proximate causes outside of those specified in ABCT include the following. First, loose money policies in the major world economies allegedly triggered large capital inflows into Brazil. Two BCB officials (Hennings and Mesquita 2008) demonstrate that foreign direct investment (FDI), after reaching a peak of around \$40 billion (U.S.) in 2001, fell to about half that in late 2003, then began strongly surging again after mid-2004, reaching around \$60 billion (U.S.) in early 2008. Local equity market inflows surged from \$5.4 billion (U.S.) in 2005 to \$24.6 billion (U.S.) by 2007. In this exact same time interval, gross inflows surged from \$32.3 billion (U.S.) to \$116.6 billion (U.S.). “[N]et or gross terms, these inflows are unprecedented in the post-World War II Brazilian experience” (Hennings and Mesquita 2008, 107).

Second, BCB increased the money supply in Brazil. Third and last, government fiscal and regulatory policy added more fuel to the boom. One alleged example is a September 2003 executive order (later legislatively approved in December 2003) that authorized banks to offer loans that could be repaid through automatic payroll deductions. A study by Coelho, Mello, and Funchal (2010) found that the new law caused a significant decline in interest rates and significant increase in credit.<sup>6</sup>

Brazil’s economic cycle will be divided into three phases. Phase 1 is the continuance of the Macroeconomic Tripod (T-boom for short) by President Lula throughout his first full term and half of his

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<sup>6</sup> The authors do not necessarily agree with these purported extra-ABCT causes. A planned follow-up study will explore this issue in greater detail.

second term, the years 2004–08 in which the boom began. President Lula's first year in office was 2003, but that year was removed from this study because, as previously mentioned, it was a period of great instability which clouds the analysis.

The financial crisis in the United States which peaked in September 2008<sup>7</sup> with the failure of Lehman Brothers investment bank was the trigger that shifted the Lula administration away from the Macro Tripod. The administration's new model, later named the New Economic Matrix, was based on five major pillars:

1. Aggressive reduction of interest rates.
2. Credit expansion to consumers and private enterprises through publicly owned commercial and development banks.
3. Government privileges for boosting specific private companies.
4. Subsidies and fiscal abnegation for specific sectors to boost the economy.
5. State enterprises controlling prices and inflation.<sup>8</sup>

Even though all of the aforementioned interventions played a part in causing the boom and bust, this study will argue that the main causes were artificially low interest rates and accompanying credit expansion and that all other interventions were secondary in nature.

Lula's shift between economic models will be referred to as "Reset" in this paper, an allusion to the old mindset of PT, which advocates major government interventions to steer Brazil's economy. This second stage of Lula's economic program contains the Reset and Economic-Matrix boom or M-boom. In other words, this paper divided the boom periods of the cycle into two parts: T-boom (Phase 1) and Reset plus M-boom (Phase 2).

Finally, the last phase (Phase 3) is the bust. Brazil's economy shrank for 11 consecutive quarters, producing the worst crisis in the nation's history. The second leg of the "flight of the chicken"

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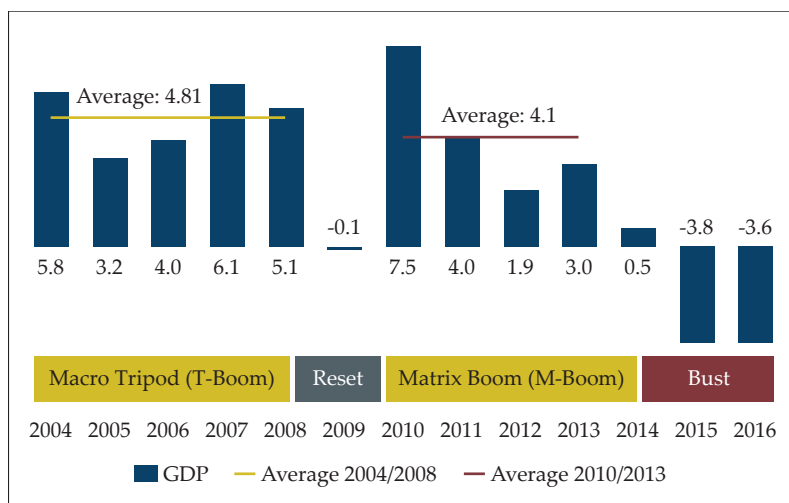
<sup>7</sup> While the initial tremors of the crisis were felt in the bank runs against BNP Paribas (9 August 2007) and Northern Rock (14 September 2007), the apex of the crisis was undoubtedly the collapse of Lehman Brothers on 15 September 2008.

<sup>8</sup> This economic plan was gradually being implemented and refined over some years, starting in 2008 and taking full form by 2011. For a timeline of this economic plan and its main pillars, see Roque (2015).

lasted five years (2010–14) before the economy nosedived into the dark waters of deep recession.

In Figure 1 below, the blue bars evince economic growth for 2004–14. The years 2004–08 delivered a mean of 4.81 percent annual growth. The year 2009 represented mainly stagnation for the Brazilian economy. Between 2010 and the beginning of 2013, annual growth was 4.1 percent. While this Matrix-boom average is lower, it is still close to that of the T-boom phase. In the last phase (bust), there was a deep recession with 3.8- and 3.6-percent negative growth in 2015 and 2016, respectively. What is not shown in Figure 1 below is that the recession ended in the first quarter of 2017 with a positive quarterly growth rate in GDP of one percent.

**Figure 1. Average Annual Growth Rate in GDP Across Brazil's 2004-16 Business Cycle**



Source: Central Bank of Brazil GDP series 7326.

For the purposes of this article, it will be assumed that the Reset began after the peak of the U.S. financial crisis in September 2008 and ended at the end of 2009. The M-boom began in about January 2010 and ended in approximately February 2014. These dates are estimates because it is difficult to pinpoint with great precision when



the boom and bust phases began and ended. The great precision that is lost is not relevant for the purposes of this paper. In some cases, only full years will be analyzed—the specific months that characterize each phase will be dismissed. Table 3 below specifies in detail the approximate boundaries of each phase.

**Table 3. Components of the Brazilian Business Cycle (2004–16)**

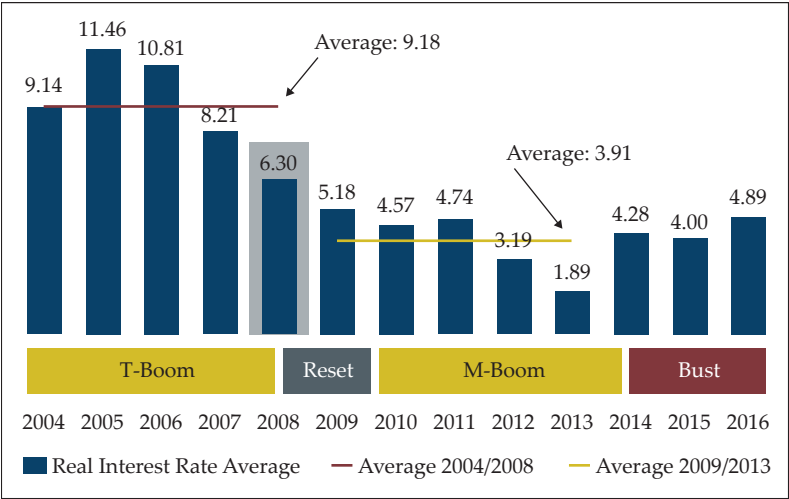
Phase	Stage of Business Cycle	Label	Time Period
1	Boom (Phase 1)	Macro-Tripod Boom or T-boom	T-boom: Jan. 2004-Sep. 2008
2	Boom (Phase 2)	Economic-Matrix Boom or M-boom	Reset: Oct. 2008-Dec. 2009 M-boom: Jan. 2010-Feb. 2014
3	Bust (Phase 3)	Recession (Bust)	Bust: Mar. 2014-Dec. 2016

## V. PHASES 1 AND 2: T-BOOM, RESET, AND M-BOOM

One of the most important aspects of ABCT is the manipulation of the interest rate by the central bank. Figure 2 below illustrates real annual interest rates throughout Brazil's recent cycle. In the first phase of the cycle (2004–08), the real interest rate averaged 9.18 percent per annum. During the second phase—Reset and M-boom—between 2009 and 2013, the mean real interest rate was 3.91 percent.<sup>9</sup> This is a difference of 5.27 percentage points, or a fall of about 57 percent. Throughout the bust, the real annual interest rate fell no lower than 4 percent.

<sup>9</sup> Special System of Liquidation and Custody (*Sistema Especial de Liquidação e Custódia*, SELIC for short) is the system used by the Central Bank of Brazil (BCB) to implement its interest-rate policy *via* buying and selling government bonds.

**Figure 2. Five-Year Average of Annual Real Interest Rates in Brazil (2004-08, 2009-13)**



Source: Central Bank of Brazil (BCB). SELIC series 4390. For the real interest rate calculation authors used Fisher equation. For the nominal rate, authors used annualized SELIC rate and for the inflation rate authors used the IPCA 12-month inflation index for each month. The blue bars represent the average for the year.

Recall that when the interest rate falls, the demands for both capital goods and consumer goods will be stimulated (Garrison 2001, 72). If the interest rate fell between the first two phases, this would lead us to expect that credit offered to businesses and consumers would enjoy strong and continued growth between the two periods.

It is interesting to note the behavior of M2 surrounding the reduction in the interest rate. Table 4 displays the compound-adjusted growth in M2 in each phase.

**Table 4. Compound Average Growth for M1 and M2**

Phase	Stage of Business Cycle	Time Period	CAG M1	CAG M2	M2 Average (Phase 2 Only)
1	T-boom	Jan. 2004 - Sep. 2008	15.34%	20.83%	
2	Reset	Oct. 2008 - Dec. 2009	24.52%	12.15%	12.93%
	M-boom	Jan. 2010 - Feb. 2014	8.54%	13.71%	
3	Bust	Mar. 2014 - Dec. 2016	4.43%	7.27%	

Source: Central Bank of Brazil (BCB). M1 and M2 series 27791 and 27819, respectively.

It is clear that the boom period had an outstanding growth rate in M2 of 20.83 percent in Phase 1 and 12.98 percent in Phase 2. Before analyzing the results, it is important to make an observation about credit markets in Brazil. Brazil's credit markets are divided by the Brazilian central bank as follows: government-supported credit policies (code 7524); "free-market" credit for businesses (code 12128), and "free market" credit for consumers (code 12127).<sup>10</sup> The first category, credit supported by government policies, includes loans through state agencies such as the National Bank for Economic and Social Development (*Banco Nacional de Desenvolvimento Econômico e Social*, BNDES for short), which offers subsidized or policy-oriented credit to sectors chosen by the government. The second category, "free-market" credit, includes all credit that is offered by banks to businesses and consumers. It should come as no surprise that the entire Brazilian credit market is subject to significant government control. Between 2004 and 2012, the average government share in total credit was 34 percent.<sup>11</sup>

Figure 3 shows the growth of credit in the first two phases of the cycle. Displayed in the left panel of Figure 3 is the growth pattern of business credit. It is composed of government and free market credit for businesses. The average annual compound growth rate was 22 and 16 percent for Phases 1 and 2, respectively. Displayed in the right

<sup>10</sup> If one wants to see the combined series for "free-market" credit (businesses and consumers), the code is 12130.

<sup>11</sup> For this calculation, the authors used the last month of each year (December) for government credit (code 7524) divided by total credit in the period (the sum of total government credit [code 7524] and "free-market" credit [code 12130]).

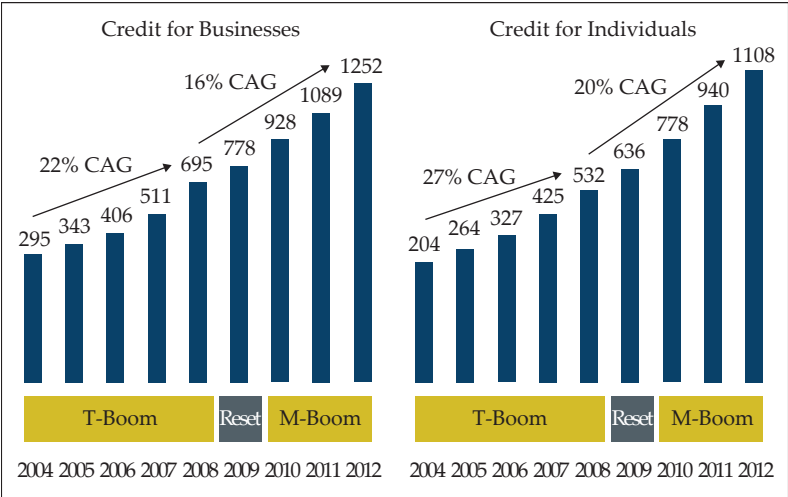
panel of Figure 3 is the growth pattern of credit for individuals. Note that the growth of credit to individuals is even higher than the growth of credit to businesses in Phase 1, reaching 27 percent. In Phase 2, there is an impressive 20 percent rate of continued growth in credit to individuals. Interestingly, the growth rates of credit in Phase 1 for both graphs (22 and 27 percent) are higher than their counterparts in Phase 2 (16 and 20 percent).

As alluded to in the previous section, certain factors unquestionably drove this credit expansion. In terms of alleged causes not specified by ABCT, one suggestion is that loose money policies in the major world economies directed large capital flows into Brazil. No matter how they are measured—net or gross—the inflows were unrivalled in the post-World War II history of Brazil (Hennings and Mesquita 2008, 107). Government fiscal and regulatory policy added more stimulation. One alleged example is an executive order authorizing banks to offer loans repayable through payroll deductions. This “innovation” significantly expanded credit (Coelho, Mello, and Funchal 2010).<sup>12</sup>

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<sup>12</sup> Again, the authors do not necessarily agree on all of these purported extra-ABCT causes. A planned follow-up study will explore this issue in greater detail.

**Figure 3. Credit Expansion for Businesses and Individuals (in billions R\$)**

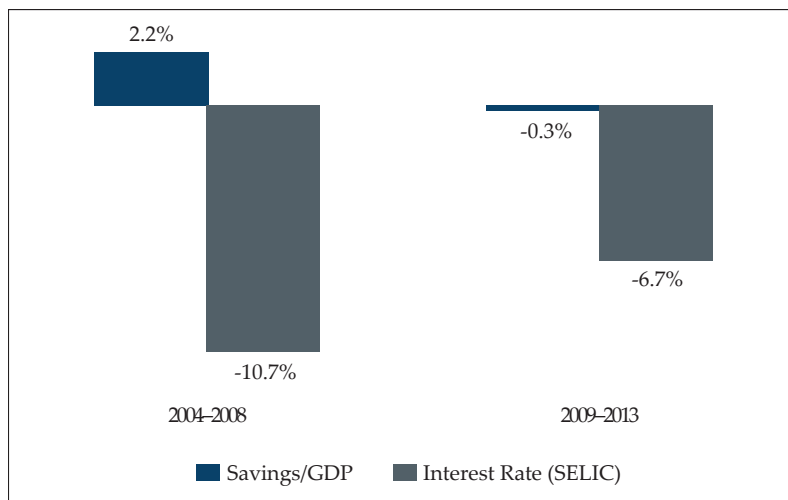


Source: Data from BCB (Brazilian Central Bank), elaborated by authors. Business credit series is a result of the sum of government credit policies for business (code 20021) with free market credit for business (code 12128). For individuals, it was calculated by the sum of government credit policies for individuals (code 20020) with free market credit for individuals (code 12127). It used December of each year as a basis for this calculation. For the calculation of compound average growth (CAG) in 2004, it used December 2003 as a starting point. Those series were discontinued and were only available until 2012, which means that the second phase will have a year less.

A fall in interest rates would not be a problem *per se*, provided that it was driven by voluntary savings on the part of individuals (Hayek 1931). When individuals increase their savings, interest rates fall and funds flow to capital goods. When this route is followed, the time preferences of consumers can be synchronized with those of entrepreneurs who want to engage in new projects (Manish and Powell 2014). As a consequence, savings behavior during the recent Brazilian cycle must be analyzed to determine whether Brazil’s massive credit expansion was caused by a natural increase in voluntary savings or artificial state actions.

The next figure, Figure 4, juxtaposes the average growth rate of savings with the interest rate.<sup>13</sup> In the first phase of the cycle (2004–08), the average annual growth of savings was 2.2 percent of GDP, rising from 15.3 percent (at the end of 2003) to 16.9 percent of GDP. However, the interest rate fell an average of 10.7 percent per annum. Its range was between 11.25 percent and 19.75 percent, with an average of 15.07 percent. In other words, the first phase was characterized by a large reduction in interest rates coupled with a relatively low growth rate in savings, as can be seen in the two bars on the left-hand side of Figure 4 below.

**Figure 4. Average Annual Growth of Savings and Interest Rate**



Source: World Bank and Brazilian Central Bank data, elaborated by authors. Interest Rate (SELIC) series: 4390.

Table 5 below summarizes what happened to interest rates, savings, and monetary and credit expansion in Phase 1 and Phase 2. Phase 1 had a nominal average interest rate of 15.08 percent while Phase 2 had a nominal average rate of 9.77 percent, a fall of 35 percent. The average real interest rate for Phase 1 was 9.18 percent,

<sup>13</sup> For the 2004 savings-growth statistic, the authors used the 2003 statistic (15.3 percent of GDP) as the basis (World Bank 2018).

while for Phase 2 it was 3.91 percent. In terms of savings, Phase 1 had an annual growth rate of 2.2 percent while Phase 2 had an annual growth rate of -0.3 percent.

**Table 5. Interest Rates, Money, Credit, and Savings  
(Consolidated Results)**

Variable	T-Boom 2004-08 Phase 1	Reset + M-Boom 2009-13 Phase 2
Average nominal interest rate	15.08%	9.77%
Maximum nominal interest rate	19.13%	11.69%
Minimum nominal interest rate	12.15%	8.21%
Average real interest rate	9.18%	3.91%
M1 (CAG)	15.34%	16.53%*
M2 (CAG)	20.83%	12.93%*
Credit for businesses (CAG)	22%	16%
Credit for individuals (CAG)	27%	20%
Average annual growth of savings (portion of GDP)	2.2%	-0.3%

\*Average for Phase 2 (Reset + M-Boom)

It is reasonable to conclude that the consistent fall in the interest rate in both phases was not driven by an increase in voluntary savings. In fact, in the second phase, there was a *decline* in savings. The decline in the interest rate and increase in credit had a huge impact on credit expansion for businesses and individuals, which in turn caused a significant distortion in the structure of production as explained in the next section.

### Central-Bank Control of the Interest Rate and Its Impact on Higher and Lower Orders of Production

To analyze the impact on the structure of production, we explored Phase 2 and 3 in greater depth. The structure of production was gradually changing in Phase 1 and started undergoing a complete distortion in Phase 2. As a result, the authors dedicated more analysis to this distortion that occurred in Phases 2 and 3.

The impact of lowering interest rates in the absence of voluntary savings will be different within higher and lower orders of production (Hayek 2008). In the terminology of statistical analysis, higher orders of production have a higher standard deviation in production levels than lower orders of production (Rothbard 2000, 9).

The results are consistent with ABCT. Recall that these results were elucidated earlier in the methodology section of this article for all sectors for which it was possible to obtain industrial-production data: Mineral, Intermediaries, Semi- and Non-durables, etc. Table 6 below displays the standard deviations of these sectors through Phase 2 and Phase 3. Standard deviations and the averages for each sector were then calculated.

**Table 6. Industrial-Production Volatility for Phase 2 (Reset and M-Boom) and Phase 3 (Bust)**

Production Stage	Sector	STD DEV	MAX	MIN
Higher order	Minerals	8.06	115.00	71.80
Intermediary	Intermediaries	8.50	111.40	75.80
Lower order	Semi- and Non-Durables	8.46	116.00	78.70
-	General*	9.21	112.60	75.80
Lower order	Consumer	9.56	116.30	75.50
Intermediary	Transformation	9.88	113.70	73.70
Higher order	Construction	12.24	110.90	61.10
Higher order	Durables	16.73	119.30	54.70
Higher order	Capital Goods	18.29	127.10	51.60

\* All sectors included.

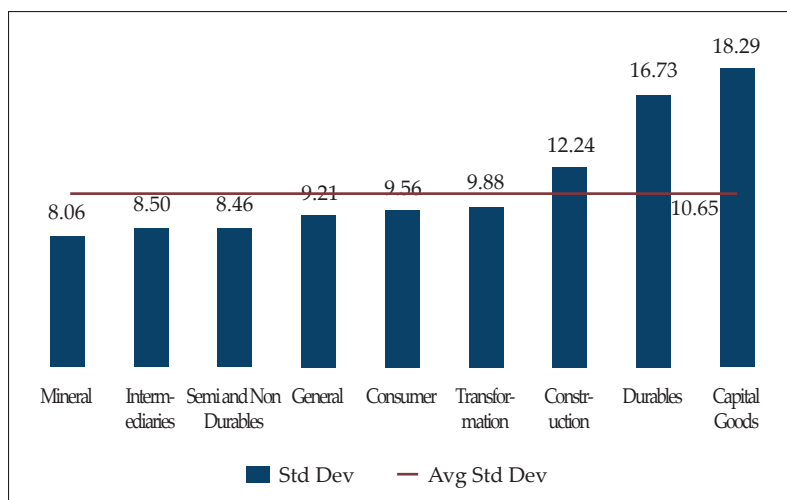
To calculate the average standard deviation, two extreme values were eliminated from the data set (Minerals and Capital Goods). The average standard deviation of all sectors is 10.65. Figure 5 below reveals that three sectors of the economy were above average: Construction, Durables, and Capital Goods. These three sectors were clearly the most volatile and received the most impact from central-bank stimuli. They represent 75 percent of the higher-order sectors.

The data for the Construction series became available in January 2012—in the middle of the M-boom—which means that the actual



standard deviation could be much greater than the recorded values indicate. This of course would have represented even stronger confirmation of ABCT.

**Figure 5. Standard Deviation of Industrial Production Among Sectors for Phases 2 and 3 (Sep. 2008 to Dec. 2016)**



Source: Central Bank of Brazil (BCB).

One notable exception in the data was the mineral sector, clearly an industry belonging to the higher-order category. In Brazil, this industry has a large portion of its production in two main sub-sectors: iron ore and petroleum and natural gas (and its byproducts). For the iron-ore subsector, it is very well known that one of the most important markets is exports, and for that reason it is very sensitive to international-market conditions. In 2014, about 86 percent of Brazil's iron-ore production was exported. In 2016, Vale (one of the largest iron-ore producers in the world) achieved a new production record which stood in stark contrast to the contraction witnessed in the other higher-order sectors (Construction, Durables, and Capital Goods) during the recession (Rosas and Machado 2017). Hence, iron ore is not synchronized with the internal Brazilian business cycle and thus of little relevance to this study.

As for petroleum and natural gas, the main supplier of those products is the state-controlled company Petrobras, one of the largest oil companies in the world. This sector is subject to heavy government intervention, thus central planning, not free markets, guides much of its decision making. During the boom, the government prevented the company from raising prices in an attempt to control inflation, even at the cost of significant losses (“Petrobras Approves New Fuel Price Readjustment Policy,” 2013). Such strong state influence muddles the analysis, since the government could accumulate large losses without compromising production.

Taking the long view, the standard deviation, from January 2004 to December 2016, is 10.64. In other words, the standard deviation converges to the average of other sectors. This is not the case for the capital-goods sector which over the same time span had a standard deviation of 18.27: almost identical to the present results. The fact that the petroleum and natural-gas sector is so extensively state controlled makes it almost certain that production decisions were influenced by political considerations rather than sound market fundamentals. This undoubtedly led to distortions in output.

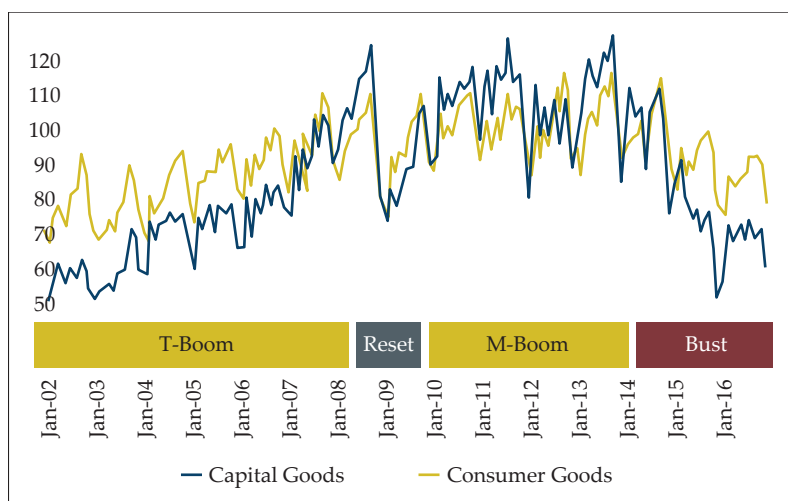
In sum, the results show that Brazil’s higher-order sectors experienced the highest growth in the M-boom and the steepest fall in the bust phase compared to lower-order sectors of production. These results are consistent with ABCT. The Mineral sector is an anomaly because of its atypical export dependence in iron ore. The Petroleum and Natural Gas sector is another outlier because extensive government controls guide its production decisions.

## Capital and Consumer Goods: A Closer Look

In Phase 1, industrial production for capital and consumer goods was relatively low in 2003, with index values of 50 and 68 (base year 2012 = 100), respectively. Figure 6 below reveals that both had tremendous growth in subsequent years until this growth was interrupted by the peak of the U.S. financial crisis in September 2008. After this interruption, growth fell precipitously until about the end of the first quarter of 2009. From January 2003 (50.9) to October 2008 (124.8) to February 2009 (73.4), capital goods rose 145 percent to a high and fell 41 percent to a low. From February 2003

(68.1) to October 2008 (110.3) to February 2009 (77.3), consumer goods rose 62 percent to a high and fell 30 percent to a low.

**Figure 6. Industrial Production of Capital and Consumer Goods Indices (Base Year 2012 = 100)**



Source: Central Bank of Brazil (BCB). Capital-goods series 21863. Consumer goods series 21865.

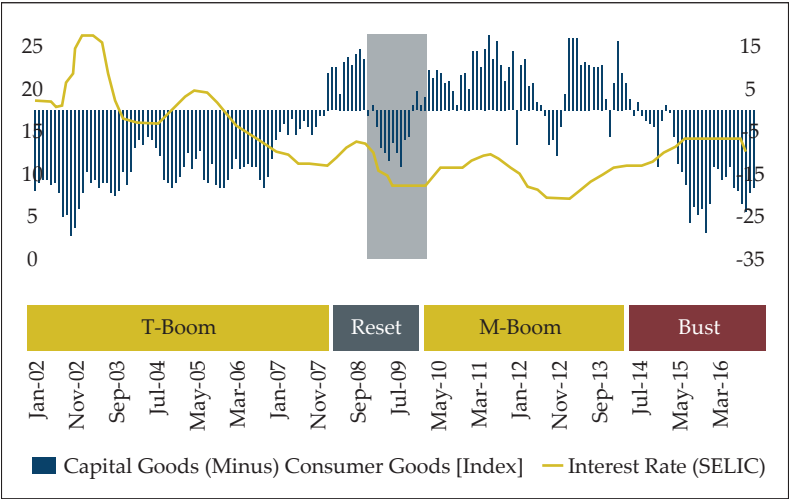
After the Reset, the government began to suppress interest rates with the aim of stimulating the economy, going so far as to even threaten private banks to get on board the program (“On TV, Dilma Raises Tone to Private Banks and Asks Interest Cut,” 2012). The effects of this in terms of greater relative capital-goods volatility can be seen very clearly in Figure 7 below, which shows industrial-production index differences (capital goods minus consumer goods). Where the blue bars in the aforementioned figure indicate negative values, the capital-goods index was less than the consumer-goods index (see scale values on the right vertical axis of Figure 7). The inverse is also true.

Note that in Phase 1 (2004–08), capital-goods production exceeded consumer-goods production for only ten months of the 60-month Phase-1 period. In contrast, during the 2009–13 period (Phase 2), capital-goods production was higher than consumer-goods

production for 44 out of 60 months, i.e., for nearly 70 percent of the phase. That fact supports the idea that the structure of production was distorting in Phase 1, however, only in Phase 2 did this distortion reach the point of irreversibility. This is consistent with ABCT, where production of capital goods grows faster than that of consumer goods in the boom phase with this production only to be eventually corrected by market forces during a subsequent bust.

The interest rate is also displayed in the graph, showing a trajectory of successive declines and then a sustained low rate through the T-boom and M-boom (see scale values on the left vertical axis of Figure 7 below).

**Figure 7. Interest-Rate Impact on the Structure of Production**

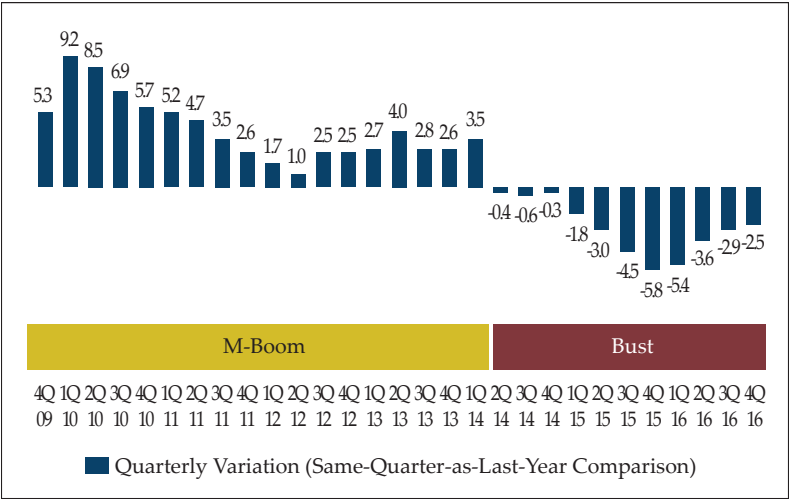


Source: Central Bank of Brazil (BCB). SELIC series 4390.

## VI. PHASE 3: RECESSION

In the second quarter of 2014, Brazil’s output began to fall. The next graph shows year-on-year growth in Brazilian GDP on a quarterly basis. GDP shrank for 11 consecutive quarters, resulting in the longest recession in a century.

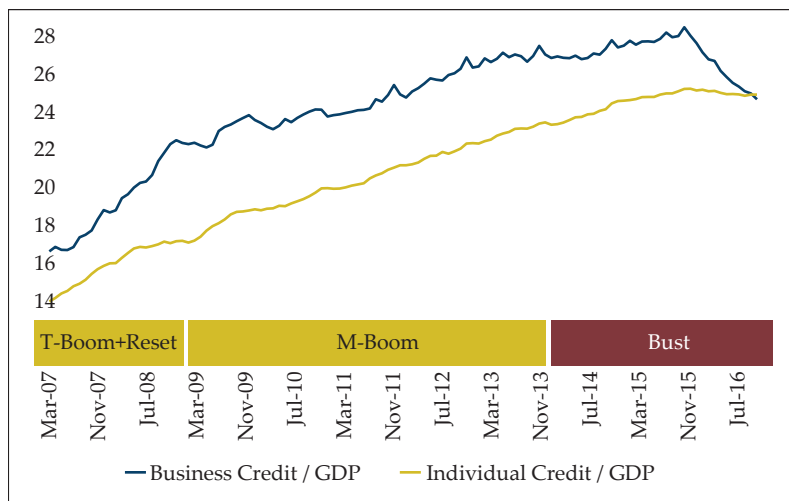
**Figure 8. Quarterly GDP Growth During the M-Boom and Bust Periods 2009-16**



Source: Brazilian Institute of Geography and Statistics (IBGE). Quarterly GDP growth series 5932.

Credit had a delayed impact on Phase 3 (bust) of the business cycle. Figure 9 shows the long expansion of credit as a percentage of GDP for both businesses and individuals. For 2012, credit grew at a 5.7 percent rate for businesses and a 6 percent rate for individuals. By 2015, the rates had fallen to 2.4 percent for businesses and 3.1 percent for individuals; both forms greatly slowing with business credit falling faster. The following year, 2016, credit expansion entered a clear tailspin, growing at a rate of –13.4 percent for businesses and –1.2 percent for individuals.

**Figure 9. Credit Expansion and Contraction as a Proportion of GDP (%)**



Source: Central Bank of Brazil (BCB). Business credit/GDP series 20623. Individual credit/GDP series 20624.

As can be seen in Figure 9 above, there was no observable contraction in credit at the beginning of the bust. Instead, credit levels fell only in the third year (2016), with businesses cutting back (–13.4 percent) much more than individuals (–1.2 percent) as confirmed in Table 7 below.

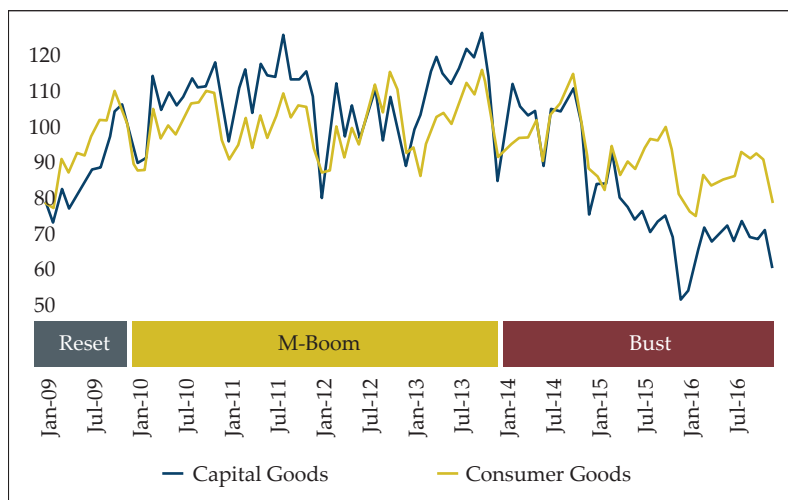
**Table 7. Business and Individual Credit as a Percentage of GDP (M-Boom to Bust)**

Phase	Year	Business credit/GDP (Annual change)	Individual credit/GDP (Annual change)
2 (M-Boom sans Reset)	2010	1.2%	6.2%
	2011	5.4%	5.5%
	2012	5.7%	6.0%
	2013	2.3%	4.7%
3 (Bust)	2014	1.1%	4.5%
	2015	2.4%	3.1%
	2016	-13.4%	-1.2%

Source: Central Bank of Brazil. Business credit/GDP series: 20623. Individual credit/GDP series: 20624.

Recession is the healthy part of the recovery process because it is the adjustment of the economy back to its original condition (Rothbard, 2009). Without further state interference, the economy will move back to equilibrium, prices and wages will fall, and unviable businesses will go bankrupt. The recession is the economy’s attempt to adjust to the state of current natural time preferences, utility, and scarcity, which is not necessarily the pre-boom state of affairs because of at least slight changes that could have occurred in these underlying phenomena. This can be observed in the production of capital and consumer goods in Figure 10 below (base year 2012 = 100). Production of capital goods falls steadily between 2014 and 2016, a decline greater than that experienced by consumer goods.

**Figure 10. Structure of Production of Capital and Consumer Goods Indices for Phases 2 and 3 (Base Year 2012 = 100)**



Source: Central Bank of Brazil (BCB). Capital goods series 21863. Consumer goods series 21865.

Despite the visible difference in the two series in the graph, the phenomenon of returning to “the old standards before the crisis” affected industrial production. The authors noted the six months with the highest average value in the boom and the lowest average value in the bust. They also compared the lowest average value during the recession with the six months before the Reset in which similar values could be found. Results will show how many years of performance the economy lost in the bust phase. The reason for searching before the Reset is the Brazilian government’s reaction to the peak of the U.S. financial crisis in September 2008 (which led to muddled data for 2009). The authors used six-month averages to insulate the results from monthly seasonal variations.

For the production of consumer goods, the highest performing six months in the M-boom was the second half of 2013, when the index averaged 106.56. The worst six-month period in the bust was the first half of 2016, with an average of 82.16. The economy then returned to the type of output levels it had in the first six months of 2005 when the index averaged 82.63. That is, consumer-goods production returned to the level of 11 years previous.



For capital goods, the highest level was in the second half of 2011, with the index averaging 115.31. The lowest average in the recession was 66.53, recorded in the first six months of 2016. Capital-goods production fell back to levels not witnessed since the first half of 2004. In other words, this was a decline lasting 12 years.

Table 8 below summarizes the performances of capital and consumer goods in terms of all averages combined among the M-boom and Bust stages.

**Table 8. Recession Adjustment Process (Industrial Production)**

Type of Goods	Highest Output (M-Boom)	Lowest Output (Bust)	Year Before Reset When Output Was as Low as the Bust	Fall in Output (Approximate Years)
Consumer	2nd half* of 2013	1st half of 2016	1st half of 2005	11 years
Capital	2nd half of 2011	1st half of 2016	1st half of 2004	12 years

\*half = two consecutive quarters

Table 8 shows that capital goods returned to their initial condition in the T-boom phase. This is consistent with ABCT's prediction that the economy would return to approximate pre-boom levels (Mises 2008). Consumer goods declined to their level of 11 years previous (in the first half of 2005). Capital goods fell even more, falling to their level of 12 years previous (in the first half of 2004). The Brazilian economy returned to its approximate initial conditions when the boom first started in 2004.

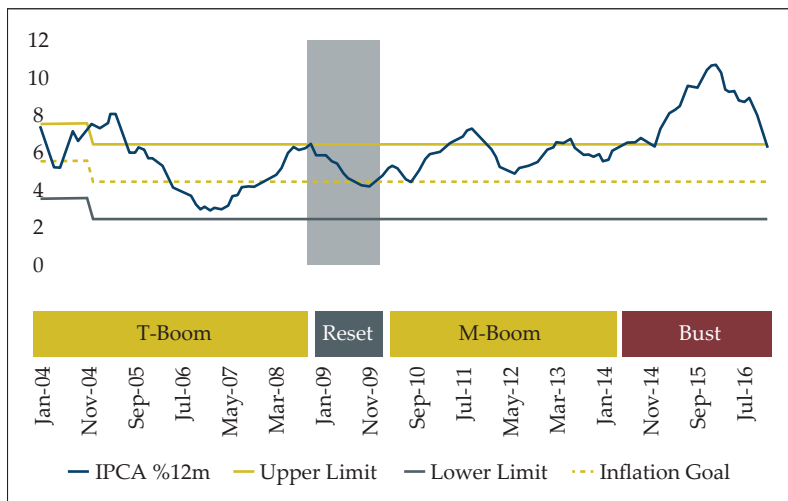
## VII. INFLATION THROUGHOUT THE BUSINESS CYCLE

Brazil's economic history is full of inflation inanity. Between 1964 and 1994, the nation's accumulated inflation was more than one quadrillion percent when measured by the IGP-DI index (Leitão 2011, 23). The inflation tsunami was finally brought under control by the 1994 Real Plan, which implemented a new currency and several other important measures. Inflation in the year following

the plan was approximately 13 percent. Although this is not a remarkable achievement *per se*, it is impressive when compared to 1993 when inflation averaged 30 percent per month.

The Central Bank of Brazil (BCB) has an inflation target that guides its interest-rate policy. If inflation is rising or expected to rise, interest rates will rise and the opposite occurs for falling inflation. In addition, BCB sets upper and lower limits of two percent (above and below its inflation goal), which means that inflation must be inside this pre-established range. BCB uses the Broad National Consumer Price Index (*Índice Nacional de Preços ao Consumidor Amplo*, IPCA for short) as its official measure to guide its interest-rate decisions (Central Bank of Brazil 2016b).

**Figure 11. Consumer Inflation**



Source: Central Bank of Brazil (BCB). IPCA series 13522. Inflation target series 13521.

Figure 11 above shows the performance of consumer inflation during the three phases. The graph is very clear when it comes to BCB inflation-policy effectiveness. The periods in which inflation was mostly outside of BCB's target range were mainly in the bust phase. However, as further analysis will show, inflation was postponed rather than tamed by BCB interventions.

According to Table 9 below, in 49 months of Phase 1, inflation was within BCB's target range, a success rate of approximately 88 percent. Inflation averaged about 5.3 percent per annum during this period. Phase 2 had similar results, however, it was the period when government interest-rate interventions became aggressive. Although 82 percent of the months in Phase 2 displayed inflation within BCB's target range, inflation was artificially suppressed by many state actions. ABCT predicts that consumer inflation will rise in a boom and fall in a bust. However, if government interventions prevent inflation from rising in a boom, it would be rational to expect that a subsequent bust will be hyper-affected by the inflationary forces that were artificially suppressed during the boom.

Sure enough, in the bust, Brazil's inflation rate was higher than in any other phase. In January 2016, inflation reached a peak of 10.71 percent, the highest level in the previous 13 years. During the bust, inflation was within BCB's target range for only five months out of 34, giving the central bank a rather unimpressive success rate of 15 percent.

**Table 9. Inflation-Goal Performance**

Phase	Label	Months within target range	Months outside target range	% within target range	Total months in period	Average inflation rate (% in period)
1	T-boom	49	7	88%	56	5.3%
2	Reset + M-boom	54	12	82%	66	5.7%
3	Bust	5	29	15%	34	8.2%
<b>Total</b>		<b>108</b>	<b>48</b>	<b>69%</b>	<b>156</b>	<b>6.1%</b>

For the classification of inside or outside the target range, the inflation range set by BCB was used (Central Bank of Brazil 2018).

## How Government Interventions Postponed Economic Recovery

As mentioned above, government interventions in Phase 2 postponed inflation that would have been ordinarily felt during a period of credit expansion. Therefore, higher rates of inflation were experienced only in Phase 3, and still only in a subdued manner.

Inflation as measured by IPCA has two main components: a) “free market” prices; b) government-controlled prices (“Petrobras Approves New Fuel Price Readjustment Policy” 2013). The first component covers all prices that are set by voluntary exchanges in the “free market,” while the latter category covers prices set by government decree *via* its agencies, companies, and structures. Government-controlled prices are also set at the federal, state, and municipal levels. In May 2016, government-controlled prices represented nearly a quarter of the IPCA (Central Bank of Brazil 2016a) and that proportion is similar to the one that prevailed in earlier years (Solomao 2013). In Brazil, the government uses its discretionary authority to influence prices as measured by IPCA. If the government postpones price increases, the index will be held down artificially.

In Phase 2, government interventions intensified. Table 10 below summarizes many of those decisions which worked to postpone inflation (which should have been felt during the M-boom but was not felt until the bust).

**Table 10. Brazilian Government Interventions to Suppress the Inflation Index (Selected Indices)**

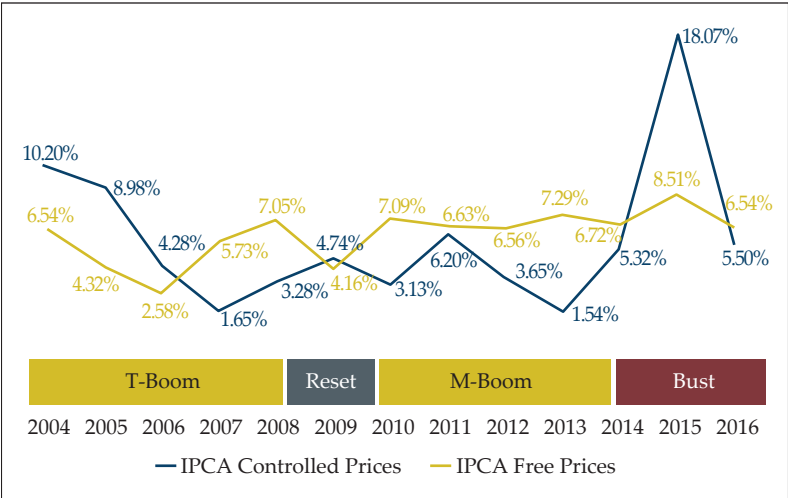
IPCA Components	Period	Intervention	Weight in Controlled Prices (May 2016)
Residential electric power	Phase 2 (M-boom)	Government obliged companies to automatically renew concessionary contracts, resulting in an unstable environment for private investment (power distributors are mainly private). In addition, government implemented a policy to subsidize part of the costs of residential power in return for the private sector not raising prices (Landim 2014).	15.01%
Residential gas	Phase 2 (M-boom)	State-controlled oil company Petrobras lost nearly R\$ 10.5 billion by not adjusting gas prices (Soares 2014).	4.85%
Gasoline	Phase 2 (M-boom)	Petrobras accepted subsidies on gasoline through cuts in the gasoline tax (CIDE) in order to not increase inflation. At that time, the government estimated that prices should rise 22% but resorted to subsidies instead of allowing prices to rise. This decision was against Petrobras management's recommendation ("Petrobras Approves New Fuel Price Readjustment Policy" 2013).	16.90%
		<b>Total</b>	<b>36.76%</b>

All the interventions in Phase 2 deferred inflation to the future. The effects were felt only after the M-boom, when most of the artificially low prices could not be sustained. In 2013, there was a 15.65-percent fall in residential electric-power prices as a result of government intervention. However, in 2014 and 2015, prices rose 17.06 percent and 50.99 percent, respectively.<sup>14</sup>

<sup>14</sup> Accumulated inflation for each year. Data from BCB series 4453.

The following graph, Figure 12, juxtaposes year-by-year IPCA controlled prices with IPCA free-market prices. The graph shows government-controlled prices sliding way below free-market prices in both boom phases (but especially in the M-boom years of 2011–13) before disproportionately racing ahead of them in the bust years of 2014–15, reaching a peak of 18.07 percent in 2015. At a minimum, the striking divergence between the two series between 2011 and 2015 evokes questions about its cause.

**Figure 12. Controlled Prices Compared to Free-Market Prices (Annual Averages)**



Source: Central Bank of Brazil (BCB). IPCA series 4449. IPCA free-market series 11428.

Controlled prices fell from an annual rate of 5.68 percent in Phase 1 to 3.85 percent in Phase 2, a fall of 32 percent. During the same period, free market prices rose from 5.24 percent to 6.34 percent, a rise of 21 percent. Controlled prices then rose by an annual average of 9.63 percent in Phase 3, a 150.1-percent increase when compared to Phase 2. Free market prices also rose in Phase 3, but the average increase was about 14.4 percent when compared to Phase 2 (see Table 11 below).

**Table 11. Annual Inflation: Controlled vs. Free-Market Prices**

Phase	Label	Government-Controlled Prices	Free-Market Prices
1	T-Boom	5.68%	4.58%
2	Reset + M-Boom	3.85%	5.57%
3	Bust	9.63%	6.34%
	Average	5.89%	5.37%

Without question, Brazil’s government made its recession worse through its manipulation of prices. Instead of leaving prices to fluctuate normally in response to market forces, the government used its power to influence prices as part of its interventionist agenda. Price adjustment, though, cannot be postponed forever. The result was that when the recession finally arrived in 2014, inflation was not able to fall as part of the natural adjustment process. Because of past government interference, prices first had to perversely spike in 2014–15 (the Bust) to compensate for past suppression.

The bust is the start of the recovery process (Rothbard 2009) when prices fall, malinvestments are liquidated, bankruptcies rise, and the high debt ratio for households and companies remains steady or falls (Salerno 2012). However, one main component of the recovery process—prices—was not aligned with the business cycle. Prices had to rise because of government suppression during the boom phases, and this had to occur in the recession. The bust’s increase in inflation combined with negative industrial production was a deadly combination in hindering business profitability.

If the government had not held down prices in the boom it would be realistic to expect that inflation would have fallen in the early months of the bust (2014), and as a consequence, the recovery process would have been faster. Instead, inflation only began falling about two years after the recession began.

**VIII. EXPECTED RESULTS AND OBSERVED FACTS**

The observed facts from the recent Brazilian experience, when compared with ABCT expectations, are not surprising. Table 12

below reveals that 13 out of 15 (87 percent) expected results from ABCT theory were confirmed by the data.

The variables that fell outside expectations were three: savings, inflation, and money supply. Savings actually rose 7.4 percent in the first year of the bust (2014). However, in 2015 it fell 11.3 percent, turning the net effect negative. Individuals did not increase savings in the period. However, for consumption the fall was far greater. As a standalone variable, savings declined but when compared to consumption, it experienced a lower decline.

As for inflation, as discussed in the previous section, Brazil did not experience a sharp fall during the bust. Government intervention prevented controlled prices from rising during the boom, which meant that they had to adjust upwards in the bust. Thus, controlled prices climbed 18 percent in 2015. If the government had not manipulated prices, then prices almost certainly would have fallen in the bust period.

As for the money supply (M2), as Table 4 above indicates, while the average growth rate in M2 was certainly not negative, it was about 35 percent of what it was during the T-boom. M1 was about 29 percent of what it was during the T-boom. The growth rate of both measures of the money supply had declined significantly.



**Table 12. ABCT Realized Results**

Variable	T-Boom and M-Boom	Observed?	Bust	Observed?
GDP	Rise	Yes	Fall	Yes
Interest rate	Fall	Yes	Rise	Yes
Money supply (M2)	Rise	Yes	Fall/ Stagnate	No*
Credit	Rise	Yes	Fall	Yes
Savings	Stagnate, fall, or rise less than credit expansion	Yes	Rise	No
Industrial production (higher orders)	Rise more than lower orders	Yes	Fall more than lower orders	Yes
Industrial production (lower orders)	Rise less than higher orders	Yes	Fall less than higher orders	Yes
Inflation	Rise	Yes	Stable or lower	No

\*See CAG for M2 in Table 4 above. While the growth rate of M2 was not negative it was on average a little more than a third of what it was during the T-Boom.

## IX. CONCLUSIONS

This study intended to analyze the 2004–16 Brazilian business cycle through the lens of Austrian Business Cycle Theory (ABCT). From ABCT, 16 expected results were delineated and nearly all of them were empirically confirmed, thus strong supporting evidence in the recent Brazilian experience was found for ABCT. The boom initiated in 2004, the structure of production began to be distorted, and this distortion became more pronounced during the second part of this boom. The Brazilian government continually lowered the interest rate, bringing it low enough to create an artificial boom followed by a severe bust that was not just another typical “flight of the chicken,” but Brazil’s most severe recession in more than a century.

This study’s findings reinforce ABCT’s accuracy in explaining business cycles. In this day and age, it is surprising that mainstream economists still ignore or misinterpret ABCT (Garrison 1999, Evans

2010, Salerno 2012). As for politicians and regulators, there is no way that governments can precisely manage a modern economy through monetary and interest-rate central planning, and it is certainly not possible to do so without temporarily warping an economy's production structure.

This article aspires to be one of the first scientific studies of the recent macroeconomic crisis in Brazil to utilize the theoretical framework of ABCT. The hope is that it will introduce a fresh perspective in economics for Brazilian economists, business executives, entrepreneurs, academics, and political leaders who can effect social change in Brazil. In a recent survey (Heritage Foundation 2018), Brazil ranked 153 out of 180 nations in terms of having one of the lowest levels of economic freedom in the world. The authors hope that this study will help reverse Brazil's dismal ranking in economic liberty and bring about lasting changes in Brazil for the economic betterment of its 210 million people.

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## BRAZILIAN STATES' ECONOMIC FREEDOM INDEX: APPLYING FRASER'S METHODOLOGY FOR 2003-2016 DATA

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JEL CLASSIFICATION: D78, H7, J45, J5, P47

**ABSTRACT:** The purpose of the paper is to apply Fraser's methodology from the *Economic Freedom of North America* report to Brazilian data. government size, tax and labor market indicators vary among subnational entities. Following Friedrich A. Hayek's tribute on the occasion the 70th birthday of Ludwig von Mises, the importance of an index for Brazilian States is to bring principles of liberalism—based on clear evidence—to public figures (Hayek 2012), particularly in a country dominated by interventionist ideas since the 1930s. Besides the academic challenge of obtaining and processing data in the same manner as the *Economic Freedom of North America*, the current turning point in politics and economics in Brazil demands this kind of applied research. The results

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suggest that the Brazilian states' freedom scores are getting worse in recent years (2012–16), following the same trend as that of the national index. We argue for the idea that the increasing government interventions at the federal level have spread out to states and municipalities and have had the effect of institutionalizing and justifying decreases in freedom and greater influence of public entities on citizens' everyday life. The final remarks point out improvement in institutional measures for the index, as an ongoing project as Milton Friedman stated on his foreword to *Economic Freedom of the World: 1975–1995*: to “bring the indexes of economic freedom up to date and to incorporate the additional understanding that will be generated.”

## 1. INTRODUCTION

Brazil is the largest economy in South America and the second largest economy in all the Americas (measured by GDP). However, its position on Fraser's Economic Freedom Index is 137 (Gwartney, Lawson, and Hall 2017) with a 5.75 absolute score.

The purpose of this paper is to apply Fraser's methodology from *Economic Freedom of North America* (Karabegovic, McMahon, and Samida 2002; hereafter EFNA) to Brazilian data. Government size, tax and labor market indicators vary among the subnational entities. Following Friedrich A. Hayek's tribute to the 70th birthday of Ludwig von Mises, the importance of an index for Brazilian States is to bring principles of liberalism—based on clear evidence—to public men (Hayek 2012), particularly in a country dominated by interventionist ideas since the 1930s.

Although there are state level sustainability indexes, there has not been not any index or any objective information to discuss and compare the economic freedom level of Brazilian states, which are heterogeneous. Besides the academic challenge of obtaining and processing data in the same manner as the Economic Freedom of North America, the current turning point in politics and economics in Brazil demands this kind of applied research.

The so-called “Brazilian State Level Economic Freedom Index” (BSLEF) is a synthetic indicator that measures the extent to which the policies of the Brazilian states are able to support economic freedom, that is, the ability of individuals to act in the economic sphere without undue restraint.

In order to present BSLEF, we organized this paper in the following sections. Section 2 briefly discusses the literature on state level

economic freedom. Section 3 describes the methodology applied to Brazilian data. Section 4 presents the results of BSLEF and its evolution over the period 2003–16. Section 5 contains the final comments, remarks and suggestions for future directions of research.

## 2. LITERATURE REVIEW

The calculation of an index for states and provinces is an attempt to explore institutional differences in countries which have some degree of independence among their jurisdictions. Capital accumulation, technology, labor productivity and even demographics can be affected by institutions, as pointed out by Acemoglu and Robinson (2013). Thus, local institutional frameworks can drive different social and economic outcomes inside the country.

The first work about state level economic freedom was the index developed in 2002 by the Fraser Institute for the states and the provinces of United States of America and Canada, respectively (Karabegović; McMahon, and Samida 2002). Since its original publication, several studies have been attempting to evaluate the index and “good outcomes,” such as economic growth. More precisely, there are evidences that the index is positively related to “good outcomes” and negatively related to “bad outcomes” (Hall, Stansel, and Tarabar 2015).

The subnational economic freedom index is calculated by adapting some components from the *Economic Freedom of the World* (Gwartney, Lawson, and Hall 2017; hereafter EFW) for state level/provincial data. The components have been extracted from “Size of Government” (Area 1) and “Regulation” (Area 5). Therefore, there are three areas in areas in the state/provincial index: “Government Spending” (Area 1), “Taxation” (Area 2) and “Freedom of Labor Market”—i.e. “Regulation”—(Area 3). (Stansel, Torra, and McMahon 2016)

Some evidences are particularly important for the work we are doing in Brazil. Compton et al. (2011) uses GMM methodology for a panel dataset, exploring both aggregated and disaggregated EFNA. They found that changes in economic freedom are positively associated to changes in growth—even considering differences in educational level and demographics.

Bennet (2016) explored 50 U.S. states and 10 Canadian provinces from 1980 to 2010. The results obtained show that subnational

economic freedom is associated with higher levels of income per capita and lower rates of unemployment.

Also, Bennet (2016) found that subnational economic freedom is associated with higher income inequality across states and provinces of U.S and Canada. Nevertheless, the higher income inequality that arises due to economic freedom is associated with higher levels of economic growth fostered by a freer institutional environment—as shown by Bjørnskov (2016) and Wiseman (2016).

Income, employment and growth are consequences of human action, particularly entrepreneurship, as Mises (1966) explains. Empirical research shows there is a positive relationship between economic freedom and entrepreneurial activities. Sobel (2008) uses EFNA as a proxy for “institutional quality” for a cross-section of U.S. states. He found that a freer environment (e.g. ‘good institutional quality’) is strongly associated with net entrepreneurial activity, such as venture capital investments and patents.

These results are very important for Brazil, where the economy has been struggling since 2014 and has been engaged in debate concerning market oriented economic reforms towards growth, employment and development.

### 3. METHODOLOGY

Based on Stansel, Torra, and McMahon (2016), the overall summary index BSLEF is calculated by an equally weighted sum of three areas.

$$BSLEF = \frac{1}{3} \cdot A_1 + \frac{1}{3} \cdot A_2 + \frac{1}{3} \cdot A_3$$

where  $A_1$  is “government spending,”  $A_2$  is “taxes” and  $A_3$  is “regulation” (freedom of the labor market). Each component in Area 1, Area 2 and Area 3 is normalized through the years<sup>1</sup> according to:

$$C_i = \frac{(V_{max} - V_i)}{(V_{max} - V_{min})} \cdot 10$$

<sup>1</sup> For  $A_1$  and  $A_2$  components  $V_{max}$  is computed using the lower maximum value of the mean plus 1.5 standard deviations. For  $A_3$  components,  $V_{max}$  and  $V_{min}$  are the maximum and the minimum from the data for whole period (2003–16)

Many components are calculated as a percentage of subnational income. For example, 1A is general consumption expenditure as percentage of income. The source for income data is National Survey from Home Sampling (e.g., PNAD), which is an annual household survey (except for census years, such as 2000 or 2010) that covers every state in Brazil. “Household income” is obtained similar to Canada and Mexico cases in EFNA<sup>2</sup>.

$$\text{Annualized income} = 12 \times \text{Monthly declared income}$$

### 3.1 Government Spending

In order to measure the degree of economic freedom of the Brazilian states (Area 1 of the BSLEF), based on the proportion of their expenditures in relation to annualized income, the data source was the Brazilian Treasury.

Following the methodology developed in Stansel, Torra, and McMahon (2016), we added public expenditures within the territory of each of the 26 Brazilian states (25 federal units plus the capital Brasília, considered the Federal District), which includes both those carried out by the governments such as those carried out by municipalities.

Thus, we will calculate three components, as detailed below: General Government Consumption Expenditure as a percentage of income (1A), Transfers and Subsidies as a percentage of income (1B), and Insurance and Retirement Payments as a percentage of Income (1C).

Since the objective of the present work is to make a comparison of the degree of economic freedom between the Brazilian states, the component Public Companies and Investment (1D), defined for all-government index only, was not calculated.

#### 3.1.a. Component 1A: General Consumption Expenditures by Government as a Percentage of Income

In order to measure the proportion of the General Consumption Expenditures by Government as a percentage of annualized income,

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<sup>2</sup> For 2010 we calculated income in the same fashion, but data are from the census.

government subsidies and transfers were subtracted from total current public expenditures, in addition to the payment of interest on public debt. Table 1 presents the calculation of the government's general consumption expenditure, according to the general methodology proposed in Stansel, Torra, and McMahon (2016):

**Table 1. General Consumption Expenditures by Government**

Total Current Government Spending
(-) Subsidies and Government Transfers (Persons)
(-) Subsidies and Government Transfers (Firms)
(-) Subsidies and Government Transfers (Other Governments Levels)
(-) Interest Payment
<b>General Consumption Expenditures by Government</b>

In the Brazilian case, however, since state governments spend a significant part of their budget on transfers and subsidies, not only for families, firms and other government entities, but also for multi-governmental institutions, public consortiums, foreign institutions and military service, the resulting expression is considerably more comprehensive. Thus, Table 2 presents this expression, which we applied to obtain the General Consumption Expenditures by Government, using fiscal data of each state (General Consumption Expenditures by Government I – GCEG I).

**Table 2. General Consumption Expenditures by Government (States)**

	Total Current Government Spending
(-)	Transfers to Federal Government
(-)	Transfers to Other States
(-)	Transfers to Municipalities
(-)	Transfers to Multigovernmental Institutions
(-)	Transfers to Public Consortiums
(-)	Transfers to For-Profit Organizations
(-)	Transfers to Private Non-Profit Organizations
(-)	Student Financial Support
(-)	Government Support for Research
(-)	Grants
(-)	Food Assistance
(-)	Other Personal Financial Assistance
(-)	Transportation Assistance Grants
(-)	Foreign Transfers
(-)	Military Financial Assistance
(-)	Interest Payment
<hr/>	
<b>General Consumption Expenditures by Government I (GCEG I)</b>	

For municipalities located inside the geographical area of each Brazilian state, there is also a set of transfers and subsidies, almost as large as the previous case, which must be subtracted from current expenditure, together with interest payments, in order to reach their general consumption expenditure made in the corresponding state geographical area. Table 3 shows the methodology used to obtain this part of the component (General Consumption Expenditure II – GCEG II):

**Table 3. General Consumption Expenditures by Government  
(Sum of Municipalities)**

Total Current Government Spending	
(-) Transfers to Federal Government	
(-) Transfers to States	
(-) Transfers to Other Municipalities	
(-) Transfers to Public Consortiums	
(-) Transfers to Private Non-Profit Organizations	
(-) Student Financial Support	
(-) Food Assistance	
(-) Other Personal Financial Assistances	
(-) Foreign Transfers	
(-) Interest Payment	
<hr/>	
<b>General Consumption Expenditures by Government II (GCEG II)</b>	

For each Brazilian State, component 1A value is obtained from the sum of GCE I with GCE II divided by the annualized income, as previously defined.

**3.1.b. Component 1B: Transfers and Subsidies as a Percentage of Income**

To calculate the component 1B value, all the previous transfers and subsidies for each of the states (Transfers and Subsidies I – TSI) and for the sum of the municipalities located in their respective geographical regions (Transfers and Subsidies II – TS II) have been added together. Tables 4 and 5 show the items included in this calculation.

**Table 4. Transfers and Subsidies (States)**

(+)	Transfers to Federal Government
(+)	Transfers to Other States
(+)	Transfers to Municipalities
(+)	Transfers to Multigovernmental Institutions
(+)	Transfers to Public Consortiums
(+)	Transfers to For-Profit Organizations
(+)	Transfers to Private Non-Profit Organizations
(+)	Student Financial Support
(+)	Government Support for Research
(+)	Grants
(+)	Food Assistance
(+)	Other Personal Financial Assistances
(+)	Transportation Assistance Grants
(+)	Foreign Transfers
(+)	Military Financial Assistance
<hr/>	
<b>Transfers and Subsidies I (TS I)</b>	

**Table 5. Transfers and Subsidies (Sum of Municipalities)**

(+)	Transfers to Federal Government
(+)	Transfers to States
(+)	Transfers to Other Municipalities
(+)	Transfers to Public Consortiums
(+)	Transfers to Private Non-Profit Organizations
(+)	Student Financial Support
(+)	Food Assistance
(+)	Other Personal Financial Assistances
(+)	Foreign Transfers
<hr/>	
<b>Transfers and Subsidies II (TS II)</b>	

In the same way, for each Brazilian state, the value of the component 1B will be calculated from the sum of TS I with TS II divided by the annualized income.



3.1.c. Component 1C: Insurance and Retirement Payments as a Percentage of Income

To obtain the component 1C value we added the public expenses related to employment insurance, pensions, other retirement payments and welfare payments for civilian and military servants. In Brazil, social security expenditures include both welfare and assistance payments. Tables 6 and 7 present the methodology used to determine the total expenses with employment insurance and pensions for the states (IRP I) and for the sum of the municipalities located in their respective geographical area (IRP II).

Table 6. Employment Insurance and Pensions (States)

(+)	Employment Insurance
(+)	Retirement Payments (Civil Servants)
(+)	Other Retirement Payments (Civil Servants)
(+)	Other Retirement Payments (Military Servants)
(+)	Pensions
(+)	Other Welfare Payments (Civil Servants)
(+)	Other Welfare Payments (Military Servants)
<hr/>	
Insurance and Retirement Payments I (IRP I)	

Table 7. Employment Insurance and Pensions (Sum of Municipalities)

(+)	Employment Insurance
(+)	Retirement Payments (Civil Servants)
(+)	Retirement Payments (Military Servants)
(+)	Other Welfare Payments (Civil Servants)
(+)	Other Welfare Payments (Military Servants)
<hr/>	
Insurance and Retirement Payments II (IRP II)	

Source: own table.

For each Brazilian state, component 1C value is obtained from the sum of IRP I with IRP II divided by the annualized income.

### 3.2 TAXATION

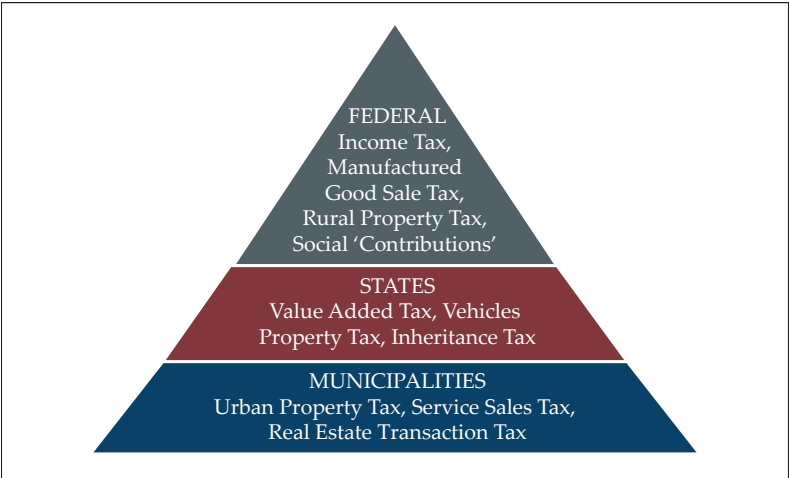
Brazil has 25 states plus the Federal District—26 total—and 5571 municipalities in 2015. The Brazilian structure of fiscal federalism originates in the 1988 Federal Constitution. Only the federal government taxes income, and the top marginal income tax rate is the same for all citizens, e.g. 27.5 percent.

Despite being a federative republic, the aforementioned Constitution raised the degree of concentration of total tax receipts in the Federal Government, despite the massive transfers that it must carry out for states and municipalities. On the other hand, the same Constitution decentralized spending on health, safety and education, leaving states and municipalities with the responsibility to provide these services. This concentration of revenues at the federal level, together with the dispersion of expenses, generates the so-called flypaper effect.

In addition, the Brazilian tax system is very complex and bureaucratic, imposing high and varying tax burden on its citizens and enterprises. The Brazilian Federal Government collects an income tax, a manufactured good sale tax, a rural property tax, and social contributions; while states collect a value added tax, a vehicle property tax and an inheritance tax. Finally, the municipalities collect an urban property tax, a service sales tax and a real estate transaction tax.

Due to this tax structure, the following components will be calculated for Area 2 of the BSLEF: Income and payroll tax revenue as a percentage of income (2A), property tax and other taxes as a percentage of income (2C) and sales tax revenue as the percentage of income (2D), thus excluding the top marginal income tax rate and the income threshold (2Bi), defined at federal level. The data source was, once again, the Brazilian Secretary of Treasury.

Figure 1. Brazilian Tax Structure



3.2.a. Component 2A: Income and Payroll Tax Revenue as a Percentage of Income

Regarding component 2A, although the payroll tax is federal, there are retentions of its revenues at state and municipality levels, which need to be incorporated as taxation according to the geographical area of Brazilian states. The same is true for the capital tax and the tax on foreign remittances. Table 8 shows the taxes considered in the calculation of Income and Payroll Tax Revenue (IPTR), both for the Brazilian states and for the sum of municipalities:

Table 8. Income and Payroll Tax Revenue (States and Sum of Municipalities)

(+)	Payroll Tax (Retentions)
(+)	Capital Tax (Retentions)
(+)	Tax on Foreign Remittance (Retentions)
(+)	Tax on Other Earnings
<b>Income and Payroll Tax Revenue (IPTR)</b>	

Source: own table.

Thus, component 2A value is obtained, for each Brazilian state, dividing IPTR by annualized income.

**3.2.b. Component 2C: Property Tax and Other Taxes as a Percentage of Income**

With regard to component 2C, the taxes considered are vehicle property taxes and inheritance taxes, collected by the states, and, at the municipal level, the property transfer tax and the urban transfer tax. Table 9 shows the taxes considered in the calculation of Property Tax and Other Taxes (PTOT).

**Table 9. Property Tax and Other Taxes (States and Sum of Municipalities)**

(+) Vehicle Property Tax (States)
(+) Inheritance Tax (States)
(+) Property Transfer Tax (Municipalities)
(+) Urban Property Tax (Municipalities)
<hr/>
<b>Property Tax and Other Taxes (PTOT)</b>

For each Brazilian state, to determine 2C component value, we divided PTOT by the respective annualized income.

**3.2.c. Component 2D: Sales Tax Revenue as a Percentage of Income**

Finally, the sales tax revenue (STR) is determined, from the Brazilian states’ point of view, by the VAT on manufactured goods, electricity and telecommunications, and from the municipalities perspective, by VAT on services (See Table 10).

**Table 10. Sales Tax Revenue (States and Sum of Municipalities)**

(+) VAT on Manufactured Goods, Electricity and Telecommunications (States)
(+) VAT on Services (Municipalities)
<b>Sales Tax Revenue (STR)</b>

To determine the 2D component value for each Brazilian State, we divided PTOT by the respective annualized income.

**3.3 LABOR MARKET FREEDOM**

The data sources for “Labor Market Freedom” are obtained from the States’ Secretary of Labor, National Secretary of Labor and PNAD.

**3.3.a. Component 3Ai: Minimum Wage Legislation**

The institution of a minimum wage by the States is ensured by the complementary Law 103/2000. Thus, the States have the jurisdiction to legislate within their geographical limits, and the resident population must follow the regional minimum wage (exceptions are made to retirees and pensioners of the Federal Social Security System or those who follow federal law). The subnational minimum wage cannot be below the national minimum wage.

For each state, we compute the minimum wage multiplied by 12 as a percentage of per-capita annual income (from PNAD). States that have their own minimum wage are from the southern and southeastern regions (the richest regions in Brazil): Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina and São Paulo.

**3.3.b. Component 3Aii: Government Employment as a Percentage of Total State Employment**

Government employment includes public servants as well as those employed by government business enterprises. Military employment is excluded, following Stansel, Torra and McMahon (2016). Total State employment is obtained from PNAD, and it comprises formal and informal jobs.

### 3.3.c. Component 3Aiii: Union Density

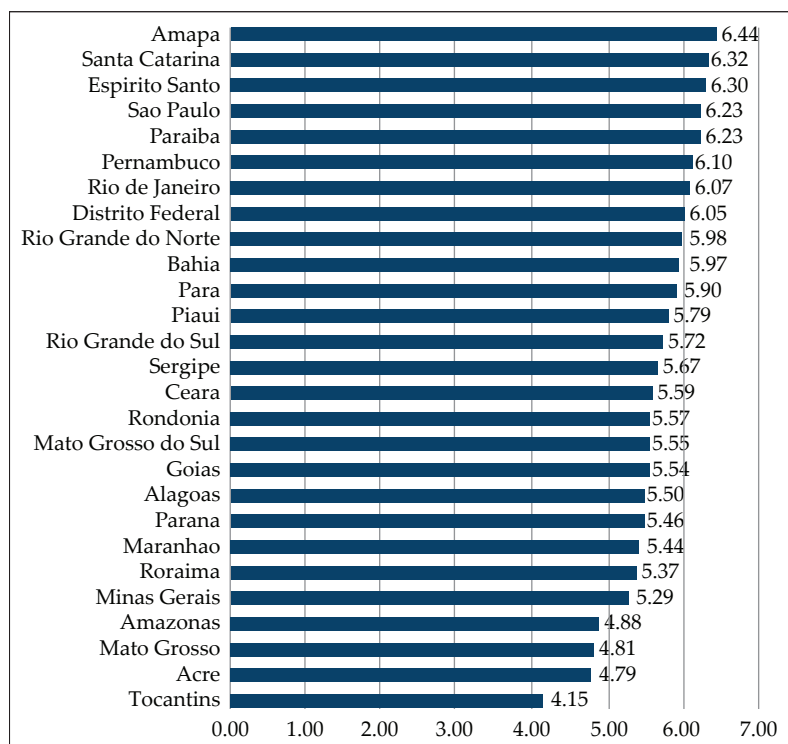
The “Union Density” component measures the relationship between unionization and public policy, other than the level of government employment. We calculated the union score by regressing the unionization rate on government employment for each given year, following Stansel, Torra and McMahon (2016):

$$Unionization_i = \alpha + \beta.Government\_Employment + e_i$$

‘Unionization’ is the number of unionized workers as a percentage of total employment and ‘Government Employment’ is the component 3Aii.

## 4. RESULTS

Figure 2 shows the summary index calculated for 2016 data—the latest available. The states with the highest level of economic freedom are located in the South, Southeast and Midwest regions of the country. With the exception of Minas Gerais, the states with the lowest level of economic freedom are located in the North and Middle West regions of Brazil (Figure 3).

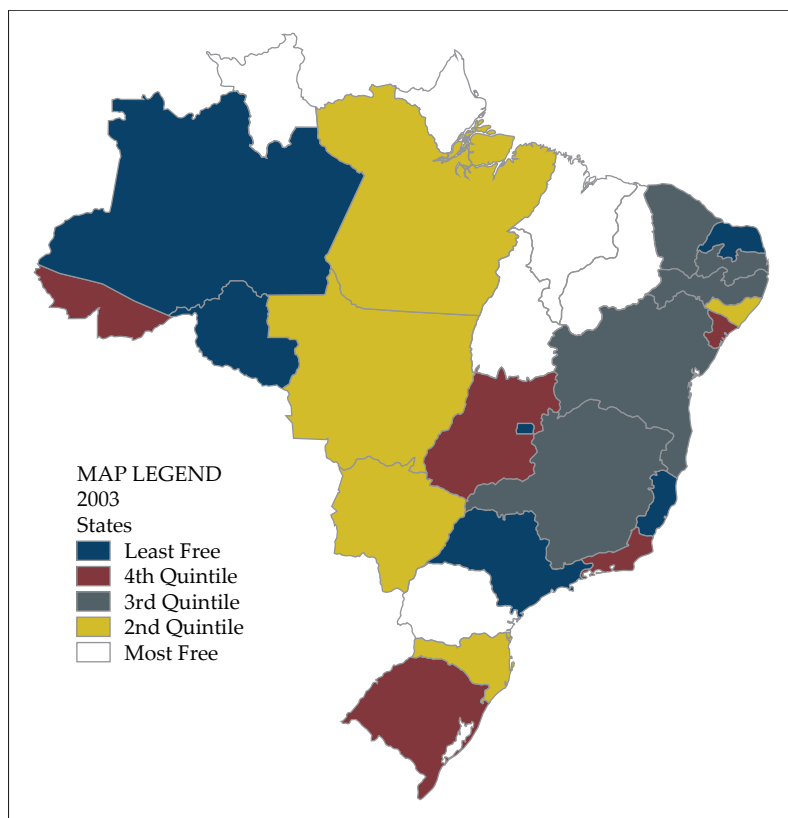
**Figure 2. Economic freedom scores for Brazilian States (2016)**

Source: Appendix

In terms of absolute value, the range of the overall scores for 2016 does not vary much—the lowest is 4.15 and the highest is 6.44. On the other hand, ranking positions have changed significantly over time. If one compares Figures 3 and 4, she sees the difference across the quintiles between 2003 and 2016.



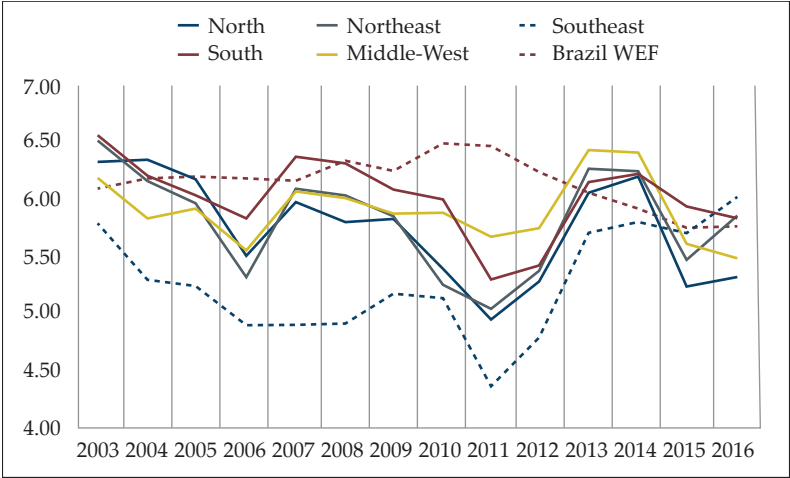


**Figure 4. Economic freedom for Brazilian States (2003)**

Source: Appendix

Changes in ranking over time can be understood by Figure 5. In order to get easiness, we aggregated score data by the averages of geographic regions. Also, we plotted Brazil's score in EFW. It can be noted that the scores followed relatively the same pattern from 2003 till 2009. As the score decreases for Brazil as a whole, the subnational's scores strongly decrease. Moreover, the regions change their relative positions. It seems that there is a degree of covariation between national and regional scores. On average, subnational economic freedom got worse as national economic freedom decreases, as we might expect.

**Figure 5. State Level Economic Freedom 2003-2016: Brazilian Region's Average**



Source: Appendix and EFW

There are some hints about the sources of the decline in subnational economic freedom over the period 2003–16. The scores have fallen at different rates. Minimum wage legislation, property taxes (and other taxes) and union density are the three major sources of decreasing subnational economic freedom in Brazil.

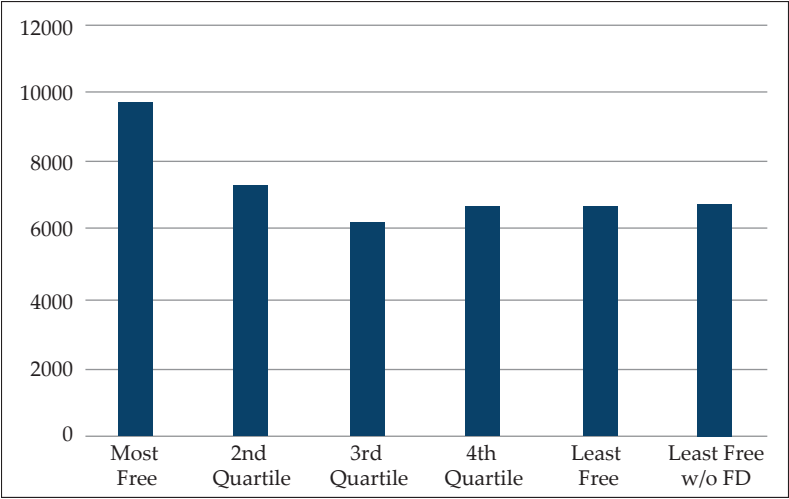
**Table 11. Scores variation in 2003-2016**

Area	Components	Score Variation (2003-2016)
Government Spending	General Consumption	-11.5%
	Transfers and Subsidies	21.0%
	Insurances and Retirement Payments	-5.5%
Taxation	Income and Payroll Tax Revenue	-6.9%
	Property Tax and Others Taxes	-25.8%
	Sales Tax Revenue	4.3%
Labor Market Freedom	Minimum Wage Legislation	-70.2%
	Government Employment	-6.6%
	Union Density	-12.4%

Source: Appendix

Another finding that is consistent with literature is the relationship between GDP per capita and economic freedom. Figure 6 shows that states with more economic freedom are more prosperous than states with less economic freedom. It can be noticed that we added an additional bar—named “without Federal District” (e.g. ‘w/o FD’). The Federal District was artificially created and instituted in 1961 to be the headquarters of Federal Government. It comprises executive, legislative, and judiciary powers and their associated bureaucracies. Its economic freedom is usually low and therefore distorts the analysis.

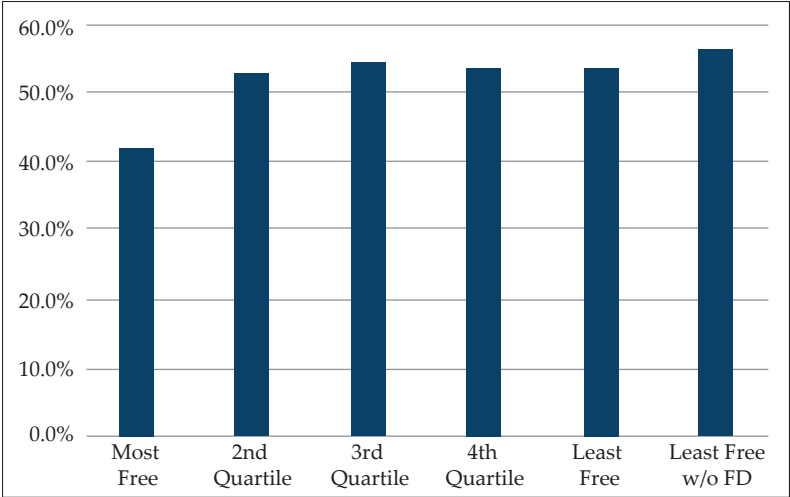
**Figure 6. State Level Economic Freedom 2016 and GDP per-capita (US\$)**



Source: Brazilian Institute of Geography and Statistics ('IBGE')

There is also an important additional outcome for the labor market. Usually some critics of economic freedom are concerned with 'vulnerability of employees' and the 'loss of rights' related to the flexibility of labor laws. The outcome contradicts these statements. Figure 7 depicts informal employment as a percentage of total employment.

**Figure 7. State Level Economic Freedom 2016 and the percentage of informal jobs**



Source: Brazilian Institute of Geography and Statistics ('IBGE')

As it can be seen, informal jobs are higher in less free states, especially if we exclude the Federal District among the group because of its distortion. Therefore, economic freedom is associated with more jobs that are formal.

**5. FINAL REMARKS**

The paper shows that it is feasible and possible to apply the methodology of EFNA to create a subnational economic freedom index for Brazil: BSLEF. Additionally, BSLEF enlightens the discussion of economic freedom and market-oriented reforms in Brazil. The results indicate that the Brazilian states' freedom scores are getting worse in recent years (2012–16), following the same trend as that of the national index. We argue for the idea that the increasing government interventions at the federal level have spread to states and municipalities and have been used to institutionalize and to justify decreases in freedom and greater influence of public entities on citizens' everyday life.

Following the literature, BSLEF is consistent with evidence from North America. Brazilian states that have more economic freedom are more prosperous (e.g. enjoy higher GDP per capita). In addition, we found that the percentage of formal employment is higher in states with higher level of economic freedom.

Once we have a consistent measure of subnational economic freedom there are several new studies and researches that can be done in order to better explore outcomes and different institutional settlements for Brazil—similar to what EFNA has been inducing.

New improvements have now been planned. We would like to increase the information about the business environment for each state. This demands a qualitative research with businesspersons or trade associations among the different states—at least their capital cities. It would be an effort to calculate some other components for Area 3 (“Regulation”) other than “labor market freedom.” The improvement on institutional measures for the index as an ongoing project, follows Milton Friedman’s statement in his foreword to *Economic Freedom of the World: 1975–1995*—to “bring the indexes of economic freedom up to date and to incorporate the additional understanding that will be generated.”

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## Appendix

ID	STATE	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
12	Acre	5,84	6,05	5,98	5,52	6,13	5,74	6,29	4,74	4,05	5,01	5,59	5,65	4,29	4,79
27	Alagoas	6,46	6,00	6,15	5,58	6,72	6,37	5,74	5,81	5,38	5,20	6,55	6,55	5,68	5,50
16	Amapa	7,60	6,75	7,31	6,09	6,29	5,85	5,77	6,64	5,63	6,09	6,89	7,38	6,03	6,44
13	Amazonas	4,70	4,70	4,84	4,31	4,52	4,22	4,74	4,01	3,50	3,51	4,81	4,90	4,34	4,88
29	Bahia	6,24	5,73	5,71	5,21	5,91	5,90	5,95	5,47	4,89	5,31	6,34	6,38	5,68	5,97
23	Ceara	6,16	5,73	5,76	5,14	5,81	5,70	5,60	4,84	4,86	5,05	5,88	5,98	5,30	5,59
53	Distrito Federal	5,57	5,43	5,41	5,68	5,86	5,71	5,56	6,12	5,66	5,62	6,00	5,76	5,80	6,05
32	Espirito Santo	5,46	4,91	4,38	3,97	3,91	4,42	4,76	4,67	4,08	4,91	5,86	6,08	5,55	6,30
52	Goiias	6,08	5,93	6,07	5,16	6,13	6,00	5,79	5,58	5,52	5,67	6,32	6,32	5,81	5,54
21	Maranhao	7,12	6,86	6,26	6,07	6,34	6,14	6,10	5,06	4,75	4,98	6,37	6,20	5,74	5,44
51	Mato Grosso	6,52	6,46	6,16	5,57	5,73	6,71	6,27	6,10	5,70	5,69	6,71	6,76	5,30	4,81
50	Mato Grosso do Sul	6,52	5,57	6,04	5,83	6,61	5,64	5,86	5,67	5,81	6,03	6,61	6,72	5,52	5,55
31	Minas Gerais	6,11	5,76	5,68	5,24	5,63	5,54	5,86	5,38	4,73	5,23	5,93	5,94	6,02	5,29
15	Para	6,43	7,28	7,03	6,33	6,85	6,57	6,32	5,74	5,78	5,79	6,36	6,29	5,62	5,90
25	Paraiba	6,35	6,11	5,95	4,80	5,78	5,96	5,85	4,93	5,07	5,42	6,27	6,29	5,91	6,23
41	Parana	7,16	6,97	6,66	6,17	6,76	6,61	6,34	6,54	5,54	5,51	6,34	6,35	5,90	5,46
26	Pernam- buco	6,30	6,18	5,87	6,06	6,10	6,08	5,92	6,23	4,87	5,34	5,81	6,26	5,28	6,10
22	Piaui	8,02	7,36	7,17	6,03	7,28	7,17	6,87	5,81	5,80	6,45	7,14	6,84	5,48	5,79
33	Rio De Janeiro	5,94	5,46	5,66	5,66	5,26	5,10	5,44	5,37	4,43	4,52	5,80	5,91	5,95	6,07
24	Rio Grande do Norte	5,82	5,72	5,52	4,39	5,23	5,69	5,24	4,97	4,84	5,42	5,73	5,83	5,26	5,98
43	Rio Grande do Sul	5,93	5,73	5,57	5,00	5,69	5,75	5,49	5,44	4,72	5,02	5,71	5,81	5,32	5,72
11	Rondonia	4,81	5,73	5,48	4,35	5,07	4,98	5,20	4,70	4,04	4,50	5,57	5,45	5,66	5,57
14	Roraima	7,36	6,89	5,85	5,92	6,36	6,63	6,05	5,69	6,05	5,85	6,34	6,89	5,49	5,37
42	Santa Catarina	6,53	5,90	5,87	6,39	6,75	6,62	6,42	6,05	5,60	5,68	6,38	6,51	6,58	6,32
35	Sao Paulo	5,68	5,02	5,29	4,79	4,85	4,53	4,58	5,07	4,25	4,46	5,16	5,23	5,28	6,23
28	Sergipe	6,07	5,72	5,32	4,61	5,33	5,14	5,33	4,20	4,91	5,03	6,29	5,75	4,99	5,67
17	Tocantins	7,56	7,00	6,80	6,06	6,50	6,60	6,62	6,21	5,64	6,11	6,67	6,72	5,12	4,15



## ON UNDERSTANDING FRANCE AND THE FRENCH SITUATION

PASCAL SALIN\*

It is often said in France that there is a “French social model” which all people around the world do envy. But the French social model is mainly a model of state interventionism, since France has the sad record of being the country in which public expenditures and taxation are the highest. And it may also be one of the countries with the greatest number of public regulations. As a consequence of this situation, France has had a low economic growth rate and a high unemployment rate for many decades.

There is therefore a very strange contrast between two things: the fact that France is a collectivized society and the fact that it has produced some of the most famous and important liberal intellectuals (for instance Turgot, Bastiat, Jean-Baptiste Say, etc.).

As we may believe that “ideas have consequences,” we are inclined to wonder why these liberal writers—who are famous all around the world—have not been able to convince French people so that France would be a model of liberalism. Truly, I have always tried to find answers to this important question, but I must confess that, for the time being, I am not certain that I have found convincing explanations.

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Milton Friedman answered to someone who wondered why liberalism had not been implemented in France: “To describe Hell correctly, you have to live inside.” This is certainly true. However, the most important liberal thinkers wrote their famous books at a period which has not been the worst in France. France has become less and less liberal—more and more close to hell—along the whole 20th century and the 21st century so that we are certainly living in hell now. However it is not during this recent period that outstanding liberal authors have been the most numerous.

Therefore we may even assume that there is a reverse causality: state interventionism is an obstacle to the development of liberal ideas. However it is also true that—maybe as a reaction to the present situation—there are more and more young people who are much interested by liberal ideas and I must say that it is the main hope I have for the future of my country.

In the present presentation I will recall some characteristic facts concerning both the history of France and the history of French liberal ideas. I will also tell about part of my own experience. And I will try to analyze the interplay of ideas and reality (the influence of ideas on policies and the influence of public powers on ideas).

In reality, there has always been in France the juxtaposition of liberal and extremely interventionist and authoritarian positions.

## 18TH–19TH CENTURIES

Until the end of the 18th century—i.e., until the French Revolution in 1789—France was a very centralized kingdom in which the king had important powers.

As regards ideas in the 18th century (the “enlightenment century”) one must stress the influence of the physiocrats who believed in the importance of individual freedom and of natural law. Turgot is a remarkable representative of this liberal thought. According to him, each individual, looking for his personal interest, will contribute to the “general interest” because there is a natural order. Turgot, as a finance comptroller of the state, suppressed internal customs and promoted the free movement of corn. He had tried to suppress corporations, which would be done by the French Revolution. The physiocrats thus laid the foundations for a liberalism which will be developed by French and English writers.

## **The French Revolution**

The French Revolution in 1789 may be considered as an example of the influence of ideas on social events. In fact, one may consider that the physiocrats had contributed to a change in the ideology of many people. Thus the Revolution has been a strong supporter of individual freedom, of the freedom of contracts and human rights (for instance property rights).

The official motto of France is “freedom, equality, fraternity.” It appeared during the French Revolution. This slogan became the official motto in the Constitution of 1848. Initially equality meant “equality in rights” as it has been claimed in the “Declaration of the Rights of People and Citizens” (1789) according to the famous sentence, “All human beings are born free and equal in rights.” But in the 20th century particularly, equality has been interpreted as an equality in standards of life and as a justification for redistributive policies. Similarly, fraternity has been interpreted as meaning that the state is in charge of charitable activities.

However, the French Revolution also offers to us an example of the ambiguous characteristic of French ideologies and policies. Thus, there have been nationalizations and as early as 1793 there was what has been called the “Terror,” i.e. a situation in which the state did not hesitate to kill political opponents. The Terror was also a period of hatred against bourgeois and wealth. In reality, people may have focused more on the organization of the state and its representatives than on individual rights. They cared mainly about the disappearance of kings.

In fact, the French revolution may be considered as a fundamental cause of the importance of the powers taken by the state. Thus, a few years after the Revolution, emperor Napoléon took public power and developed a very interventionist and authoritarian regime. Most activities became state activities, in particular education.

## **Liberal Ideas at the Beginning of the 19th Century**

The development of the liberal theory was particularly important at the beginning of the 19th century :

- Thus, Benjamin Constant and the “groupe de Coppet” (Mrs. de Staël) were supporters of individual freedom. Benjamin Constant may be considered as the first supporter of liberal democracy, namely a democracy in which public power is limited to be respectful of individual freedoms. It is not sufficient to have a state organized according to the precepts of Montesquieu, i.e. a “separation of powers” in which public institutions are controlling one the other (“checks and balances” in the US).

- Frédéric Bastiat is certainly one of the most important French liberal thinkers. He wrote several books, such as *Economic Harmonies*, and it is not necessary to summarize his ideas since they may be well known. But it is characteristic that Bastiat has been completely forgotten in France for a very long time: from the end of the 19th century his books were not republished until 1983, when a French economist (Florin Aftalion) published a book entitled *Œuvres économiques* with some of the most interesting contributions of Bastiat.

- Jean-Baptiste Say had stressed that the value of goods were not to be explained by labor value but by utility. Moreover one may consider Say’s Law (“supply creates demand”) as a fruitful argument against Keynesianism. Jean-Baptiste Say stressed the role of the entrepreneur and his famous statement “goods are exchanged against goods” implies that there is no risk of overproduction; adjustment is done by prices and freedom of exchange.

During the 19th century, liberals were called *economists*. Their opponents were “socialists.” Liberal economists expressed their views in the *Journal des économistes* and the *Société d’économie politique*. They were not University professors. These French liberals were not utilitarian—as might be Anglo-Saxon liberals—but they considered individual liberty as a natural right.

In his famous book, *Les soirées de la rue Saint Lazare*, Gustave de Molinari imagined debates between three persons, an economist (liberal), a socialist, and a conservative. Now, it is interesting that, quite often, the socialist and the conservative agree together and disagree with the economist. One may compare this approach to that of Friedrich Hayek who stressed the opposition between liberals and constructivists: the constructivists may be either socialists or conservatives.

## Evolution of Intellectual Ideas at that Time

However, in spite of the outstanding importance of liberal ideas, this period offers a characteristic example of the great divergence between dominant ideas. After the physiocrats, opposite ideas developed. Thus, at the end of the 18th century and the beginning of the 19th century, Saint-Simon got an important intellectual position. He believed that human will can rationally decide economic activities. Members of the Saint-Simon school—sometimes called “positivists”—are against private property and they suggest that the State be the owner of the means of production.

Charles Fourier in the same period was in favor of “phalanstères,” namely great production corporations in which workers would live together and decide production.

Proudhon is famous for having said “What is property? It is robbery.”

The explanation by Friedrich Hayek of the French situation may be the best answer to the initial question of the present article. In his book, *The Counter-Revolution of Science*, he devotes several chapters to the problems of France and one might be impressed by his incredible knowledge of French history and French writers. According to him the French problem is mainly a methodological problem: France has produced at the end of the 18th century and the beginning of the 20th century some of the most famous *physicists*. Given their success, people and intellectuals have been inclined to think that the method used in physical sciences ought to be used to understand social problems. Thus there has been a development of what Hayek calls rationalism, namely the belief that one may be clever enough as to understand and to manage social phenomena. Thus, there has been a development of *social engineers*, i.e. people who believe that they can rationally organize a society, as they would do for practical problems.

From this point of view Hayek pointed out the importance of *École polytechnique* (founded by Napoléon) in which the French elite has been educated, precisely with this positivist prejudice.

I suspect that, if Friedrich Hayek were writing his book now, he would stress the role not only of the *École polytechnique*, but also of the *École nationale d'administration* (ENA, national administration school) which is educating nearly all high civil servants. Many

politicians are also former students of this school. Once I was asked to deliver a course on international economics to the students of ENA, but I had first to meet the students in order to tell them what I wanted to teach. I mentioned to them several important topics which we could study, but all students, without an exception, told me that they had no interest in ideas and that the only thing about which they cared was to know how civil servants were making their decisions. I could not deliver the course, but I thus got an interesting (and regrettable) illustration of the intellectual characteristics of those who have the power in France.

Hayek also wrote several chapters in his book about Saint-Simon and the Saint-Simonians (the positivists) and he stressed that they have played an important role in the development of French ideologies and French policies.

Thus, the characteristics of the French society and French politics are certainly contrary to what the famous liberal thinkers have written, but they are coherent with other ideas, those of the positivists. From this point of view there is *not a paradox* in the French situation because of the divergence between (liberal) ideas and realities, but there is a coherence between these realities and part of the intellectual mainstream (positivist ideas).

Hayek also devoted many pages in his book to explain why one might consider that Saint-Simon inspired the ideas of Hegel. From this point of view, it can be said that ideas have consequences, at least bad ideas! And the importance of Marxist ideas in France in the 20th century is coherent with the importance of Saint-Simonian ideas.

I must also say that I am fascinated by the attention devoted by Friedrich Hayek to French problems, which may mean that it is impossible to find something similar in other parts of the world: the French situation is very specific and needs specific explanations. Friedrich Hayek used to say that “whenever France becomes liberal, it will mean that the whole world would already have become liberal.” He thus considered France as the least liberal country in the world.

Let me then tell something which is one of my great memories. With some friends of mine we had organized a lecture of Friedrich Hayek at the National Assembly. The day after I visited him at his hotel and he told me, “your friends and you are part of the hope I have in the

world." He considered it as a great achievement and a great hope that liberals do exist in a non-liberal country such as France.

### **Economic Policies in the Early 19th Century**

There have been rather liberal economic policies, for instance free trade and free enterprises; the Revolution had suppressed the corporations and had eliminated internal customs. There was in the 19th century an important development of industrial capitalism and a great increase in the number of wage-earners.

### **End of the 19th Century**

In the second half of the 19th century there was a development of social Catholicism (Lamennais, La Tour du Pin, Le Play, etc...) advocating for trade unionism and State interventionism ("Le Sillon"—"the furrow"—of Marc Sangnier).

In the 20th century, after the first world war, social Catholicism will inspire several organizations which have had a very great influence: *Action Catholique* (specific organizations for students, women, etc.), Christian trade-unions, "Social weeks" (regular famous conferences).

Marxism has been successful in France, for instance with Jean Jaurès (end of the 19th century and beginning of the 20th century). After the second world war, it might be the most important ideology in France, particularly in universities.

In 1895 a revolutionary trade union was created, CGT (*Confédération générale du travail*). It was in favor of a state representative of trade unions, with workers owners of means of production. It has been close to the Communist party and it is still very active in France (for instance as organizer of many strikes).

## **EDUCATION AND IDEAS IN THE 19TH AND 20TH CENTURIES**

France has been for many centuries a very centralized country with a strong state. Thus, people are used to such a situation and,

moreover, the state has the possibility to influence mainstream ideas. It is particularly true for education since there is a quasi-monopoly for public education in schools and universities. Some so-called private schools do exist, but it is forbidden to have more than 20 percent of private schools in France and, moreover, these schools are in fact much dependent on state decisions, for instance as regards teaching programs or the hiring of professors. As regards universities they are all public universities, with the exception of some so-called “great schools.” Thus there is a sort of vicious circle between the state and education: mainstream ideology is in favor of state interventionism and the state is imposing its ideology. Being a liberal in French universities is very difficult. Thus, when a student told me that he wanted me to be the supervisor for his doctoral dissertation, I felt obliged to tell him that, if ever he wished to do an academic career, he took a risk by writing his dissertation with a liberal supervisor such as myself.

At the end of the 19th century and the beginning of the 20th century, even economists considered liberals were in favor of state interventionism, particularly with regard to the labor market and protectionism. Between the first world war and the second world war the extreme left and the socialists were often successful in elections and there were fewer and fewer liberal economists. In fact, the first world war had increased the role of the state and state interventionism remained important in the twenties and thirties. It may be added that the great crisis of 1929 has certainly had an important influence on French minds, since it has been interpreted as a proof of the instability of capitalism.

During the second world war communists were first linked to Russia and Germany; then trade unions—mainly CGT and CFTC (Christian trade union)—joined the informal liberalization movement (*Conseil national de la Résistance*) and, when the war ended, they influenced the important reforms designed by General de Gaulle (usually considered as conservative, but who has been very close to communists and trade unions). Many state interventions were created at that time and they still exist now (for instance the privileges given to trade unions, the public monopoly for health insurance, etc.). After the end of the second world war many great firms were nationalized and national planning was decided. General de Gaulle claimed that “planning is an ardent obligation.”



For a long time, the communist party has had many members in the Parliament and there have been several communist ministers. Thus some French politicians have had close links with Stalin! Right now, the Communist Party has nearly disappeared, but there are several very active extreme-left parties.

In the forties there was the development of what has been called neo-liberalism, which is pragmatically in favor of state interventions. The *Journal des économistes* disappeared in 1940. It was also a period in which social Catholicism was developing.

Let me quote some of the economists who were considered liberals after the second world war :

- **Maurice Allais**, Nobel Prize of economics, who is usually considered as a liberal economist, tried to develop a synthesis between liberalism and socialism. He claimed, for instance, that profits and interest rates should be suppressed, he was in favor of collective property for soil. He participated in the first meeting of the Mont Pèlerin Society, but declined to become a member of the Society because it stressed the importance of private property rights!

Maurice Allais was a former student of *École polytechnique*. His methodology was close to positivism and opposite to Austrian methodology. He developed mathematical models of economics and he can be considered as a "social engineer," according to the terminology used by Friedrich Hayek. Maurice Allais was mainly in favor of protectionism and I often heard people saying that protectionism was justified since a liberal economist such as Maurice Allais was supporting it!

There is a tremendous gap between someone like Frédéric Bastiat and Maurice Allais. It may be considered a symptom of the decline of liberal ideas in France. In my book, *Libéralisme*, I show in details which are the main ideas of both economists. I consider Frédéric Bastiat a representative of what I call "*humanistic liberalism*" and Maurice Allais as representative of "*utilitarian liberalism*."

- Among intellectuals it was usual to say that "it is preferable to be wrong with Sartre than right with Aron." Jean-Paul Sartre—founder of "existentialism"—was close to the Communist Party. As regards Raymond Aron he is often considered one of the most important French liberals in the 20th century. But, in fact, he was mainly opposed to communism, without a good understanding of

economics (he was spontaneously more or less Keynesian and in favor of state interventions)

- **Jacques Rueff**—who is also one of the most famous French liberals—is another example of utilitarian liberalism. Former student at *École polytechnique*, he was a director of the public Treasury and he was most respectful of the state as a high-standard civil servant. To some extent he was famous more as an important civil servant than as a liberal.

An autodidact in economics, he used his own language and there is no real relation between what he wrote and traditional liberal literature. As with Maurice Allais, he was in favor of private property as an instrument of economic efficiency, but not for ethical reasons. He said that he was a liberal because the price system made possible economic equilibrium.

He was not against state interventionism insofar as it is not an obstacle to the working of the price system. But he did not criticize taxation because he considered that it did not modify the free working of the price system. Thus he was against price regulations by the state, but not against public expenditures and taxes.

He is certainly an important example of the traditional French “engineer-economists.” However, I remember a dinner at my home with Jacques Rueff and Friedrich Hayek (a long time ago) and, in spite of their intellectual differences, they had very friendly relations (since they met each other in the Mont Pèlerin Society meetings).

As regards politics, some politicians have been considered liberals during this period, for instance Raymond Barre or Valéry Giscard d’Estaing. But, in fact, they developed interventionist policies. As regards Raymond Barre, let me just relate the following anecdote. Taking the opportunity of the presence of Friedrich Hayek in Paris, I went with him to meet Raymond Barre, who was prime minister at that time. Raymond Barre had translated into French part of Hayek’s book, *The Counter Revolution of Science* (but not the chapters about France!) and I thought that both would appreciate this opportunity to meet. However, Raymond Barre did not want the meeting to last more than ten minutes and when Hayek suggested some reforms to be made (for instance as regards monetary policy to fight against inflation), Raymond Barre laughed and said : “It is not as easy as you believe!”

- **Valéry Giscard d'Estaing**—who was president of the Republic from 1974 to 1981—claimed to be in favor of “advanced liberalism,” but he prepared the way for the coming of socialists. At that time I used to say that Giscard was doing an “under-higher bid.” By using this expression, I meant that, whenever socialists were proposing a reform, Giscard d'Estaing, instead of supporting an opposite reform, agreed with the proposal, just saying that it ought to be somewhat smaller than what was suggested by socialists. He had said that, if ever taxation was to increase beyond 40 percent of GNP, the country would become a socialist country. But during his presidency, taxation increased from 33.5 percent to 39.4 percent, thus very close to socialist taxation according to his own opinion!

Taking the opportunity of a meeting with Giscard d'Estaing, after he had failed to be elected once more as president of the Republic in 1981, I asked him, “Why have you not carried out a liberal policy when you were president of the republic?” He answered : “As there was an economic crisis I did not want to implement liberal policies because people would have said that liberalism was responsible for the economic crisis.” He had not understood that liberalism was the way to cure the economic crisis!

In 1981 the extreme socialist François Mitterrand was elected as president of the Republic. I would like to quote a statement which is characteristic of the political mentality of this period. A socialist member of the Parliament answered to a member of the right: “You are wrong from a juridical point of view because you belong to a minority from a political point of view.” François Mitterrand decided upon dangerous socialist reforms, but a few years later the disappointment of people was so great that there was an exceptional growth of liberal ideas in public opinion and I had the feeling that France could become a liberal country. It appeared that socialists might soon lose the elections at the national Assembly in 1986, which was in fact the case. Liberalism was more and more desirable because of the obvious failure of socialism which was unable to solve the most important economic problems.

Therefore, anticipating this important change, before 1986 we had regular meetings between academics and liberal politicians to prepare the program of the government in 1986.

Meanwhile Jacques Chirac, who had previously claimed that he was in favor of “labor philosophy of the French fashion”

(“travaillisme à la française”), happened to be convinced that a conversion to liberalism was politically fruitful. Therefore, in order to appear as a liberal politician, he asked me in 1984 to make a very long interview of him in an important magazine (*Figaro-magazine*). I wrote the numerous questions of the interview, but also most of the answers (which however were discussed with him and his adviser, Alain Juppé). Unhappily, some time later, he made statements which were not perfectly coherent with what was written in the interview.

The period 1986–88 was a period of great hope for me and all liberals: The Right won the elections at the National Assembly (but François Mitterrand was still the president of the Republic). There were six liberal ministers who were friends of mine and I had very regular contacts particularly with Alain Madelin, minister of industry, and Edouard Balladur, minister of economy and finance.<sup>1</sup> We had designed some important reforms, but, unhappily, Jacques Chirac, prime minister, did not really carry out a liberal policy and in 1988 Mitterrand again won the presidential election and socialists won elections at the National Assembly. Jacques Chirac was a candidate at the presidential election and, as he did not succeed, it was said that it was because he was liberal, in spite of the fact that he had not done many really liberal reforms, except, maybe, suppressing the wealth tax (but many people, particularly on the right, suggested that he lost elections because of this reform).

In 1995, Jacques Chirac was elected president of the republic and Alain Juppé became prime minister. Alain Madelin, the most liberal politician, was appointed as minister of economy and finance and I had again a great hope that liberal policies would be adopted. In particular I had prepared with Alain Madelin, before his appointment, a very important tax reform and I was quite certain that it would be implemented. Unhappily, three months after having been appointed, Alain Madelin—who rightly disagreed with Alain Juppé—was dismissed by Jacques Chirac and our tax reform was never adopted. In 2002 Alain Madelin was a candidate in the presidential election and he got only 3.91 percent of the votes. Jacques Chirac was reelected president of the Republic at this same election.

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<sup>1</sup> I may mention that, at that time, the ministry of economy and finance was located in the famous Musée du Louvre. It is there that Edouard Balladur organized a nice reception to make me a member of the “Légion d’Honneur.”

## French Economists<sup>2</sup>

In universities there were, in the second half of the 20th century, liberal economists and economists who stressed the importance of sociological facts. For a long time marginalism and Keynesianism have been mainly studied outside universities. "Structuralism" (André Marchal) was mainly descriptive and did not care about the influence of institutions on individual behavior. These "realist and sociologist" economists were rightly critical of a mathematical approach of economics, but for them the solution consisted in describing economic structures and institutions and not in analyzing human behavior.

It must be stressed that there has been no department of economics in French universities in France until recently; economics were taught as a small part of the education of students in law. It was the case when I began to study at the University. However there has been for a long time a "concours d'agrégation" in economics (namely a national examining committee to appoint new professors in economics in all French universities), but examining committees cared more about teaching capabilities of candidates than their ability to do economic research.

According to François Facchini (2015), "in 1877, among Professors of economics, 64 percent were liberal, 9 percent socialists and 27 percent were in favor of a compromise between both schools"; "In 1970 liberals were 8 percent, 32 percent socialists and 59 percent in favor of an intermediate approach."

In 1877 several professors of economics were appointed in law universities and in 1897 an option in economics was added for the "concours d'agrégation" of law. Until then economics had been taught mainly in "high schools." Thus, at this time economics was taught by law professors. According to François Facchini, they were inspired by the *Journal des économistes* (a liberal publication), but they rather developed a kind of historicism since they did not believe in economic laws. In 1887 the *Revue d'économie politique* was created as a reaction against the *Journal des économistes* and this new magazine was intended mainly to contribute to the education of

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<sup>2</sup> Cf. Arena (2000).

people in judicial, administrative, and political activities. These professors in favor of a mixed economy inspired politicians, for instance minister Méline, who made protectionist decisions. But some liberal economists still existed (for instance Daniel Villey). Moreover, the president of the “concours d’agrégation” was appointed by the government—as it is still the case now—and this had certainly an influence on the selection of candidates.

All the economists I have known in the fifties to eighties were Marxist and/or Keynesian.

Napoléon had decided to create a monopoly in the teaching of law, but this monopoly extended to economics and there has always been a vicious circle between state activities and academic activities. From this point of view one might say that ideas have consequences, but ideas may be manipulated by public authorities.

## PERSONAL MEMORIES

To illustrate part of what has been said before, let me give some examples from my own experience.

My family was much inspired by the ideas of social Catholicism and I had to discover liberalism by myself. I certainly did not learn anything from my professors at school and in universities. My academic training in Paris could be described as a social chatter with good feelings (for instance Christian charity, which was also inspiring the MRP which was the government party).

However, learning microeconomics I had the feeling that individual behavior was the foundation of any understanding of economics. I was frustrated because I felt that there was something else than what had been taught to me. With a few friends we created the Jean-Baptiste Say seminar of economic theory, but it was a provocation to our professors. They told us: “you read American journals and you are therefore in the trailer of American imperialism. You ought to develop a specific French way of thinking.” However the Jean-Baptiste Say seminar has been recognized and funded by the University and considered seriously.<sup>3</sup>

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<sup>3</sup> We have still meetings of the Jean-Baptiste Say seminar, but the seminar does not depend on any university or other organization.

As regards the French University, as soon as Keynesian economics were discovered in France, it became the dominant ideology (with Marxism) in both universities and in public opinion, certainly because it brought justification to state interventionism. And the teaching of economics which was in my time a “mundane chatter,” quickly became a mathematical approach. This is also consistent with the French tradition giving importance to engineers (and social engineers, as stressed by Hayek).

I learned economics with my friends of the Jean-Baptiste Say seminar mainly by reading American and British journals (such as *AER*, *JPE*, etc.). We had the feeling that we had learnt nothing during the numerous years we had been university students. But, at the beginning we had the prejudice that, to be a scientist, one has to do equations, and we even organized specific courses of mathematics for ourselves.

I also remember that I was shocked that Keynes was not well known in France. Thus, on the occasion of a meeting organized by the Jean-Baptiste Say seminar with Jacques Rueff, we were surprised that he did not understand the fundamental equations of Keynes.

But our first discovery was the Chicago school and we wrote a book on permanent income. Thus I got contact with Milton Friedman, who later introduced me to the Mont Pèlerin Society.

I discovered Robert Mundell, whose writings inspired my doctoral dissertation, particularly the monetary approach to the balance of payments which I still consider as an important contribution to economic theory.<sup>4</sup>

Later on I discovered Hayek and the Austrian School. I had immediately the feeling that I had always been an Austrian economist without knowing it. I think that the first text I read was “The Use of Knowledge in Society.”

As a further example of the difficulty to be liberal in the French academic sphere, I would like to give the following example. In 2003 I was appointed by the minister of education as president of the “concours d’agrégation” (the committee in charge of appointing new

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<sup>4</sup> But I am less convinced by another theory of Robert Mundell, the theory of the optimal currency area.

professors of economics in all French universities) because there are traditional rules which implied that I had to be the president. But there was a terrific media campaign against me (and the members of the committee) because it was considered that a liberal ought not to be in charge of recruiting new professors in economics!

This appeared to me as being a particularly obvious—and regrettable—illustration of French intolerance and of the domination of anti-liberal ideas in universities and in public opinion. In fact, nearly all media are always very critical of liberalism.

Finally I would like to end this presentation by quoting the introduction of a new book of mine which is to be published soon and which I have written using articles I have published in various newspapers over about four decades. The title of this book might be *Right and Left United in Errors*:

The alternation has been frequent between the right and the left in past decades, but it is striking that the policies unfortunately were roughly the same regardless of the ruling parties. Yet it is precisely this regrettable phenomenon which explains the frequency of political alternation. As all presidents and all governments have made bad choices of economic policies, namely socialist policies, they necessarily failed to improve the economy. In the face of these visible failures, voters regularly hoped that a change in the majority could finally solve the problems. However, despite the electoral statements about the necessity of policy changes, the desirable changes have never been decided and thus French people have always been disappointed in their hopes.

Certainly, François Mitterrand, elected President of the Republic in 1981, implemented major policy changes, but in the wrong direction, and nobody radically questioned them. The book recalls the political alternatives and the regrettable similarity of all policies. It points out the severe confusion that exists from the point of view of ideas. Indeed, the failure of the policies conducted by socialists has often led voters to vote for majorities on the right. Insofar as these majorities have continued the same policies as socialists, they have obviously failed; however, as they were decided by majorities on the right, it was frequently argued that it was the failure of liberal policies. Unfortunately we have never had real liberal policies, but only a socialism from the left or from the right...

To conclude let me quote an idea of Bertrand de Jouvenel: When the state is very powerful and has many important activities, people do not try to fight the state, but they fight to get the state power. But



one may add that, when a government has a very important role, people are inclined to care more about politics than about ideas. There is a politicization of social life in France and people are more concerned by the choice of politicians than by their programs and the role of the state. It can be considered as an illustration of Bastiat's famous sentence: "The state is the great illusion according to which everyone tries to live at the expense of others." Therefore, political debates—and intellectual debates—are more interested in the possibility of specific categories of people to get power than by general views on the working of the society. This may be one reason, among other ones, why liberals have difficulties in being heard.

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## BOOK REVIEW

# GUN CONTROL IN NAZI-OCCUPIED FRANCE: TYRANNY AND RESISTANCE

STEPHEN P. HALBROOK

OAKLAND: THE INDEPENDENT INSTITUTE, 2018, 242 PP.

AUDREY D. KLINE\*

Several years ago, in these pages, I reviewed Stephen Halbrook's compelling work, *Gun Control in the Third Reich: Disarming the Jews and "Enemies of the State"* (2013). It should come as no surprise to any reader of that book that Halbrook would provide another riveting account of the role of gun control by the Nazis in occupied France in the 1940s. Relying on original sources, data records kept by the Germans on gun registrations and confiscations, and surveys of French Resistance survivors, Halbrook weaves another cautionary tale of the perils of gun prohibition at the hands of a criminal government such as the Nazi regime. Halbrook, with incredible detail, documents yet again the danger of a totalitarian regime seeking to disarm the citizens in occupied France. With contemporary calls for gun bans of varying degrees as terrorist attacks continue across the globe, Halbrook adds to the cautionary

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tale in his historical account of the case of Nazi-occupied France and the subsequent liberation.

As in Germany, in 1935, then-French Prime Minister Pierre Laval had enacted a firearms registration requirement in an aim to curb unrest and violence (p. 1). It is important to note that the registration law was a mandate, not one that was voted on by the French politicians. Just as in Germany, the firearms registry soon took on another purpose at the hands of the Nazis following the occupation of France. Halbrook painstakingly details a similar story to what unfolded in Germany as the Nazis followed their same playbook in France, exploiting existing gun laws to terrorize and disarm the French. Halbrook's book consists of eight chapters covering the period of 1934 through 1945, with attention early on focused on the call for firearms registration by Laval in 1935 to suppress violence and unrest, to the occupation and Laval's role in aiding the Nazis, to resistance, and ultimately the French Liberation.

In the five years that have followed Halbrook's first book on the subject of the Nazi's and gun control, the battle over the Second Amendment in the U.S. has only grown more divided. Recent school shootings and terrorist attacks have led to an increase in calls for gun control, and several states have seen an increase in legislation with firearms restrictions, including defining circumstances that allow for the confiscation of firearms.<sup>1</sup> Halbrook notes that the contemporary (and historical) debate between allowing an armed citizenry for self-defense versus disarming the population to prevent terrorism is a debate that might never be solved (p. 6). *Gun Control in Nazi-Occupied France* provides another cautionary tale of how good intentions can be severely abused when extremists gain control of things such as firearms registries. Nazi-occupied France saw similar tactics employed by the Nazis in Germany and consequent loss of life of French citizens who refused to disarm at the hands of the Nazis.

Halbrook opens his book by documenting the turbulence in 1934 following the Great Depression and political upheaval. A

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<sup>1</sup> See <https://www.cnn.com/2018/04/09/us/gun-laws-since-parkland/index.html> and [https://www.washingtonpost.com/national/health-science/five-states-allow-guns-to-be-seized-before-someone-can-commit-violence/2018/02/16/78ee4cc8-128c-11e8-9570-29c9830535e5\\_story.html?noredirect=on&utm\\_term=.dc222a186658](https://www.washingtonpost.com/national/health-science/five-states-allow-guns-to-be-seized-before-someone-can-commit-violence/2018/02/16/78ee4cc8-128c-11e8-9570-29c9830535e5_story.html?noredirect=on&utm_term=.dc222a186658).

massacre of civilians occurred at the hands of the Radical-Socialist government led by Édouard Daladier and other groups, leading to his resignation (pp. 8–10). This opened the door for a role for Laval once more, as he was appointed minister of colonies, and Philippe Pétain, who had been a national hero for stopping the German advance in 1915, was appointed minister of war. These two appointments would be crucial for the Nazis later on when they became the leaders of Vichy France, the puppet government of the Nazis (p. 11). Following the massacre came the prohibition on carrying firearms in Paris and Seine in early 1935.

In chapter 2, Halbrook documents Laval's rise, which included securing the power to rule by decree in June, 1935, and how Laval quickly enacted several decrees ranging from increasing the size of the Mobile Guard to hinder protests, requiring registration of people wishing to demonstrate, and requiring registration of individuals who wanted to secure a firearm (pp. 21–22). Laval's definition of war weapons banned small arms along with military weapons from the citizenry along with other restrictions, including the requirement that firearms owners and their firearms be registered. These same records, as seen in Nazi Germany, became the source for gun confiscation at the hands of the Nazis five years later (pp. 22–24). Despite the threat of the death penalty for non-compliance, compliance with the registration decree was low.

The spread of Hitler's power (also detailed in Halbrook's *Gun Control in the Third Reich*) is documented in Chapter 3, which moved into France with the blitzkrieg attack in May 1940. The invasion resulted in the posting of requirements to surrender all radio transmitters and firearms within 24 hours or face the death penalty, hard labor, or imprisonment (p. 40). Home visits by soldiers armed with a list of registered firearms rounded up weapons or shot those who were non-compliant. Elsewhere, individuals turned in guns without any receipt for their records. Several personal accounts of surrender are documented throughout the chapter; however, some resisted and hid their guns.

When Paris was bombed on June 3, 1940, a majority of the French fled, and a resistance failed to materialize. Hitler's henchmen took over, and Werner Best, who had instituted the death penalty order for refusal to surrender firearms in Germany, enacted several

decrees in France as well, notably including once again the threat of death on the spot for refusal to surrender guns (pp. 55–56). The French police ultimately collaborated with the Germans, making enforcement of the various decrees even easier. The French had no right to a defense under the terms of the armistice, and were now in the same boat as the citizens of Germany since the rise of Hitler.

Details of the occupation and the focus on eradicating weapons from the French is the focus of Chapters 4 and 5. Laval became the main collaborator with the Nazi occupation at the outset of the occupation. Concurrently, the French began to hide their hunting and military weapons for later use, while others stole across the border to the unoccupied Vichy zone. It was decreed that the French could no longer hunt, gun confiscation ramped up, and the registration of Jewish art became required, all under the guise of protecting assets with assurance that these items would be returned after the war.

With the replacement of the military commander in France in late October 1940, Werner Best's role blossomed and so did the orders for execution of the French who had not surrendered their firearms, though those in non-compliance were primarily jailed through 1941. Similar to the pattern in Germany, efforts to repress "Jews, religious groups, Communists, and other targeted classes," (p. 75) became the focus of the SS. By now, the registration of Jews was also required. Though death sentences had been issued before, the carrying out of the executions was now increasing. In an announcement on September 12, the sentence for violating the gun prohibitions or having "war materials" was now solely punishable by death, with an October 25 deadline for surrender imposed (p. 105). Many citizens were reported to continue to defy the orders. Concurrent with the escalation of executions, which were now routinely announced and publicized, the Resistance worked with Allies to obtain firearms and funds. The Swiss banks helped, as did the British. As 1941 came to a close, even as executions continued to be carried out, many of the French continued to hide their guns.

1942 saw the rise of the Resistance. Halbrook's focus in Chapter 6 includes the continued pressure to remove weapons from the French alongside the rising organization of the Resistance. Arms were parachuted in by the British, and some French police tried to hide surrendered firearms. At the same time, executions continued,

including the case of a group running the underground Résistance newspaper. They were turned in by an infiltrator and sentenced to death. Ultimately the women were not killed but were sent to the camps in Germany, though the seven men were shot to death (pp. 132–33). As late as March 1942, decrees were still being issued to surrender weapons and war materials. By the time the March decree was published, people had only a few weeks to meet the latest deadline of April 1. In an effort to create uncertainty about enforcement, the Germans stopped publishing reports of executions that had taken place (p. 142). Laval was reinstated as head of the French government by Hitler in April 1942, prompting a rise in Resistance activity. May Day saw up to 100,000 demonstrators rally against Laval (p. 146) while in Berlin, the SS was replacing the military as the policy enforcers along with the French leadership. June saw the arrival of SS General Karl Orberg in France, and the ramping up of the Nazi agenda. Jews were ordered to wear the Star of David, and the deportation of the Jews began (pp. 148–49). Deportation to concentration camps was also used for those caught stealing previously surrendered weapons for the Resistance. It is important to note that enforcement for violations of the Nazi gun control policies varied tremendously at this point (p. 151).

In June, it was announced that the SS would enforce new sentences for anyone related to the Resistance fighters. In addition, Jews were arrested and put on trains to the concentration camps (p. 154). The Resistance fighters did not stop, however, and in May 1943, the United Movements of the Resistance (MUR) brought the many branches of the movement together, armed primarily by airdrops at the risk of facing the death penalty if caught (p. 155). The Vichy cabinet reinforced the death sentence decree for anyone in possession of explosives or stockpiles of weapons. Laval continued to aid the Nazi regime, allowing the formation of the paramilitary outfit, the Milice, to uncover Resistance fighters. Laval maintained to the French that had he not cooperated, things would have been much worse. One Resistance fighter, Gilles Lévy, recounted that most of the firearms used by the Resistance had been airdropped by the British, the Americans, or were recovered from storage depots of the French Army (p. 159). Though helpful, many of the recovered weapons were not sufficient for fighting. How the Resistance secured weapons more appropriate for military warfare is the subject of Chapter 7.

Though the French army was disbanded, it defied the armistice and retained some firearms, which were hidden in Vichy until Laval ordered all weapons be surrendered to the Germans. Laval upped the ante on firearms prohibition, declaring that any "sale, possession, transportation and carrying of firearms of any kind" was punishable by imprisonment or death (p. 165). French military members still in service as of December 1, 1942, government workers, and inoperable firearms were exempt from the new order. However, failure to report any of these gun-related violations was now subject to imprisonment or death as well. Demobilized military officers were required to register their weapons and could only retain weapons in their homes. Failure to register subjected them to the death penalty as well. Still, many French citizens continued to hide weapons and did not obey the decrees to register or surrender their firearms. Ultimately the armed French citizenry was a critical component of the Resistance and liberation of Paris two years later.

Penalties ramped up in 1943, with threats of being shot on the spot for possession of weapons and explosives. Due process was increasingly ignored. Concurrently, the Resistance movement became increasingly active and coordinated. Arms drops from Allies helped the Resistance ramp up activity against the Nazis. The American Office of Strategic Services (OSS) began collaborating with the Resistance, exchanging arms and supplies for intelligence (pp. 169–70). In mid-April, efforts to move stockpiled arms to Germany ramped up, as awareness of the threat of the weapons being stored at depots falling into the hands of Resistance fighters grew. It was also ordered that hunting guns be sold to Wehrmacht troops each day, beginning April 20 (p. 177). A few months later, young men were ordered to leave for Germany for labor. Those defying the order became a supply for the Resistance instead.

Enforcement of all decrees continued to vary, however, as did compliance with orders to surrender arms, even during amnesty windows. The SS was realizing that the French would not comply regardless of the threat of death. As awareness of the possibility of an Allied invasion mounted, so too did the need to distribute any stockpile of weapons so that citizens could be prepared to fight. A shortage of firearms for the Resistance was still a problem, causing the size of the Resistance to fluctuate with variations in the gun supply. Despite the discrepancy in the number of arms surrendered

compared to the number of arms supposedly hidden, the Resistance fighters were perpetually claiming a shortage of arms and evidence suggests the majority of arms used did come from Allied airdrops.

Halbrook's concluding chapter addresses the liberation, along with atrocities committed following D-Day. Estimates of the death toll incurred to liberate Paris near 3,000, including residents of Paris, the Forces Francaises de l'Interieur (FFI) and police, as well as French and American soldiers (p. 201). A new government took over in France, ordering a dissolution of militias in the fall of 1944 as well as requiring the surrender of privately held arms (p. 203). A review of the impact of firearms prohibitions on the French during the war produced some incredible figures—execution of 60,000 people and deportation of 200,000, of which it is estimated that only 25 percent survived. Of course, it was Laval's executive order in 1935 requiring firearms registration and prohibitions on certain types of firearms that enabled the Nazis to pursue and execute so many by using the firearms registry. In the end, Laval himself was convicted and executed.

Although France did not have a guarantee of the right to bear arms, the occupation in France led America to maintain its right to bear arms. With each terrorist attack, mass shooting, school shooting, or other gun-related tragedy, however, there is always a call for gun registration, bans of high capacity magazines, bans on certain types of firearms, and so on. People on both sides of the issue would do well to read Halbrook's works on the subject and not turn a blind eye to history.

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BOOK REVIEW

THE ORIGIN OF THE PROLONGED  
ECONOMIC STAGNATION IN  
CONTEMPORARY JAPAN: THE  
FACTITIOUS DEFLATION AND  
MELTDOWN OF THE JAPANESE FIRM AS  
AN ENTITY

MASAYUKI OTAKI

OXFORDSHIRE, UK: ROUTLEDGE, 2016, x + 136 PP.

JASON MORGAN\*

Economics writing has a reputation for stolidity unto soporiferousness. To be fair, prose that trades in margins, utils, and curves-named-after-other-economists is perhaps a bit difficult to jazz up enough to read like *For Whom the Bell Tolls*. If one asked the average undergrad to rate his or her econ textbook on spiciness, the response might clock in somewhere between “cell phone contract” and “house dust.”

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That may be true, but let no one—and I mean no one—lay the blame for it at the feet of Masayuki Otaki. *The Origin of the Prolonged Economic Stagnation in Contemporary Japan: The Factitious Deflation and Meltdown of the Japanese Firm as an Entity* (whew!) is, hands down, the most raucous economics volume I have ever read. This is gripping, dramatic stuff, larded with high-flown moralizing about policy and theory that is sure to grab and hold the attention of even the most indifferent reader. In the Preface alone, a mere two pages, Otaki manages to deploy “grievous,” “precarious,” “vicious,” “spurious,” and even “egregious,” a running of the “-ous” adjectives that is perhaps even more thrilling than the running of the Pamplona bulls. I was hooked. Otaki had me at “acute roundabout trespass”; I swooned at “substantively surcharged nominally on account of keeping the Japanese border from the menus of China”; I went all doe-eyed at “fanatic captives in the quantity theory of money”. Who could put this book down? Not I. I read it in one sitting, straight through, anxiously, even rambunctiously, turning pages to find out what would happen next.

So, what happened? Well, to be honest, I’m not exactly sure. Otaki has a gift for making economics read like dispatches from the French and Indian War, but I confess I was a little too thick-headed to penetrate the meaning of some of the more esoteric passages (and there are many). Here are the main points, as near as I can tell. (Otaki very helpfully includes a “concluding remarks” section at the end of each of his seven chapters. Without those, I would have been quite lost.)

- Otaki does not like Japanese prime minister Abe Shinzō or, more specifically, his economic policies, which critics and supporters alike refer to as “Abenomics.”
- One of the main reasons Otaki does not like Abenomics is that he sees it as an extension of “Koizuminomics” (a term that I just made up and which I do not expect to catch on, for obvious reasons). Koizumi Jun’ichirō was the prime minister of Japan from 2001 to 2006, and made it the centerpiece of his administration, at least in the early days, to privatize the financial arm of the Japanese postal service. Unlike the United States, where the post office is responsible mainly for delivering grocery store circulars while racking up billions of dollars in taxpayer-funded

deficits and campaigning on the side for Democrats, the Japanese postal service is generally efficient and well-managed. So efficient and well-managed, in fact, that it also has its own bank. (US post offices provided this service, too, until about fifty years ago.) The postal bank remains in a state of semi-privatization almost two decades after Koizumi's initial attempts at reforms, but it still holds the equivalent of some three trillion dollars US in savings and insurance assets. Otaki argues that the Koizumi brand of "privatization" was really a kind of crony capitalism that Otaki calls "pseudo laissez faire."

- The Japanese people overall have been sold a bill of goods by the late-postwar pseudo laissez fairers. While early-postwar Japan still took seriously the firm as an entity that allowed for transactions not possible in the broader market (Otaki relies heavily here on Coase and Williamson, and also on the alternative firm theory of Uzawa Hirofumi and Edith Penrose), the advent of neo-liberalism and globalism, and in particular Japanese foreign direct investment (FDI) in other Asian countries, have combined to drive down wages for the average Japanese worker and hollow out the firm. Also, in the past, many Japanese companies held shares of one another's stock, which encouraged at least a modicum of regard for the wider social costs of corporate actions, but today the neo-liberal shareholder has taken the place of the worker and the firm as the beneficiary of corporate profits.
- The Japanese stock market (as well as the American stock market) has boomed following the Lehman shock of 2008 because of foreign investors, and has nothing to do with Abenomics except negatively, because investors are looking for something more profitable than the zero or even negative interest rates currently on offer by Japanese banks.

This is the basic scope and outline of the book. There are thus, according to Otaki, major structural problems with the Japanese economy. This much is clear, and even those who have not quite broken the code of Otaki's highly idiomatic English should have no trouble grasping that he is against crony capitalism (he calls the politically-connected president of Japan Railways Tokai "a pharaoh who decided to build his pyramid"), finds Prime Minister Abe and his "right-wing" ideas "appalling," and urges an "evacuation from

the myopic policy decisions” such as zero-interest rates and the spending debacle of the Tokyo 2020 Olympics.

One is inclined to agree with much of Otaki’s diagnosis. Surely, the Japanese economy is in bad shape, and surely it should be obvious to everyone but government bankers by this point that more “stimulus” spending has as much chance of “reincarnat[ing]” (to use Otaki’s term) the Japanese economy as a savings account at a Japanese bank has of generating interest. Otaki is right about all that, and I would argue that he is also right (I tend to agree with Uzawa) that one of the secrets to Japanese economic success was its very strong communal culture, which has been largely undermined in an age of crony-capitalist “rigging” (again, Otaki) of the labor market and the economy overall. There are things that firms in Japan have tended to do that have helped to humanize global competition and shield average workers from much of the destruction side of creative destruction. As the firm has changed and as Japanese business practices have been caught up in a political economy faced with major social and geopolitical upheavals, the old ways have faltered and younger workers have noticed that things just aren’t what they used to be. Stimulus doesn’t stimulate because the patient is, for all intents and purposes, already dead. Otaki is largely on the mark in this general assessment.

But here is also precisely where Otaki’s analysis breaks down. For, while he has very nicely seen what the disease is, he has failed, in my view, to understand what fundamentally causes it. In fact, I think he may be very much misinformed. For, while Otaki sees the out-of-control government spending and jerry-rigged “disinflation” and “deflation” as creatures of the “fanatic advocates of the exorbitant expansionary monetary policy [who] are only naïve captives of the quantity theory of money that has been apparently rebutted by the recent experience both in Japan and the United States,” he somehow, in a way that I just cannot figure out, at the same time manages to attribute all of this to a failure to follow the teachings of John Maynard Keynes. “Those who have common sense can hardly deny that the exorbitant expansionary policy fails in recovering the economy,” Otaki swashbuckles in the closing chapter, the excellently titled “We still have time and power.” Bravo! But wait. What’s this? Otaki also seems to think that Keynes, of all people,

supplies the antidote to this recklessness. Somehow this all begins to sound like the Atkins Diet.

Alas, Otaki's devotion to Keynes is apparently real. There's this passage, for example:

[...] the prominent disinflation in [the] Japanese economy is not a monetary phenomenon caused by the shortage of the quantity of money, but a real phenomenon which comes from the stagnation of the labor productivity progress.

Well, OK, labor and productivity are certainly very important. But the problem arises when Otaki next introduces a kind of ingrown Keynesianism to explain how "price stability" is the answer to stagnation in labor productivity. "In this sense," Otaki continues,

the concurrent monetary policy by the BOJ [Bank of Japan], which unreasonably aims to promote inflation via perturbing the confidence of money, is quite precarious. Keynes [citing Keynes (2013)] asserts that "[a] policy of price stability is the very opposite of a policy of permanently cheap money." One of his reasons is that "[m]odern individualistic society, organized on lines of capitalistic industry, cannot support a violently fluctuating standard of value, whether the movement is upwards or downwards. Its arrangements presume and absolutely require a reasonably stable standard."

Keynes is half right. There must be a "reasonably stable standard" if an economy is not to fly off the rails and spiral out of control, as the Japanese economy did when it overheated at the end of the 1980s and then imploded just as Debbie Gibson was going out of style. The reason that Japan has not found its feet again is precisely because of the failure to find this "reasonably stable standard," coupled with the handicap of not having the advantage that the American economy has (and which Otaki also mentions) of being able to print the world's common currency.

But how can Otaki fail to see that the very problems he diagnoses in the Japanese economy are inherent in Keynesianism? For example, this "vicious cycle" which Otaki laments just three pages after citing Keynes could also be read as Keynesianism's calling card:

The Busted Bubble and the Surge of FDI -> Stagnant Domestic Markets  
 -> [Rising] Unemployment -> [Decreased] Labor Productivity -> Disinflation -> [Reduced] Consumption -> Stagnant Domestic Markets

“We consider that the current Japanese economy is entrapped by the vicious cycle,” Otaki concludes. I concur. But this vicious cycle is the *creature* of Keynesianism, not something alien to Keynes’s ideas.

An economy must have a “reasonably stable standard” because, as Mises proved in great detail in *Human Action*, people act for a myriad of reasons and there is really no way to index and organize the totality of their interactions—an economy—without a standard that is infinitely fungible and common to all. The problem with fiat money, such as that printed by the ream by the Bank of Japan, the Federal Reserve, and other Houses of Keynes around the world, is that it is not money at all, but so many admission tickets to a political con game.

So, of course the Japanese government is rigging the Japanese economy. What did Otaki expect? The Roman emperors debased their own currency (also covered at length in *Human Action*), and virtually every other sovereign, prime minister, president, and chief of the exchequer who could get away with it has done the same. If someone is OK with being a member of an organization which commits armed robbery from hundreds of millions of bank accounts once every April 15th, then he or she is probably also OK with purloining money in other ways, for example by setting up a monopoly on Gresham’s Law and turning all of a given polity’s money into political scrip. It’s quite a racket. It’s what central banks do. Otaki seems to think that the Bank of Japan will one day wake up and start acting morally and for the good of the country—perhaps in the same way that a python might one day start atoning for his past life by volunteering at the Small Mammals Nursing Home. This chicanery is the essence of Keynesianism, and there is no way to prescribe the doctrine without also administering the “fatal conceit” that goes along with it.

Fortunately, there is a “reasonably stable standard” which has long proven capable of thwarting the designs of evil men “enamored with the supposed beauty of his own ideal plan of government”: gold. Gold is real money. Gold works as money precisely because nobody can make gold but God. (The reason

Isaac Newton spent so much time on alchemy experiments was not because he was kooky, but because as the Master of the Royal Mint he spent decades fighting counterfeiters and wanted to be sure that they could not reproduce the coin of the realm.) Government bankers, who have never been known to scruple about any possible differences between themselves and the Deity, elide this one sticking point and end up running a nationwide—even, in the case of the Fed, a worldwide—counterfeiting scheme of their very own, to enormous profits for themselves. But with gold, this is not possible. Governments and their bankers are kept on a gilded leash. The bad that a state would do—and, boy, would it do it if it could—is caged up by an eternally sound currency. Keynesianism is the Houdini act that lets governments wriggle out of this pen and do whatever they please with the people's cash.

But Otaki is having none of this. He wants Keynesianism both ways. For example, he compares the collapse of the Japanese bubble economy in the early 90s and the subsequent lost decades to the Showa Depression, when the Great Depression in the United States began to affect the Japanese economy in the early 1930s. Otaki attributes the worsening of the Showa Depression to the *return* to the gold standard, something that Otaki says was “genetically infeasible for Japan judging from the incessant current account deficits adjacent to huge fiscal deficits.” Investors saw the return to gold coming and cashed out, thus triggering an avalanche of defaults and business closings.

[...] the rejoining at the excessively high parity only triggered the tremendous outflow of the fiducial currency. Every subtle speculator foresaw the embargo in the near future (December 1931) at the very beginning of return to gold standard. They purchased huge amounts of USD in exchange for fiducial currency, and thus severe domestic monetary contraction occurred.

To summarize, the most prominent feature of the Showa Depression is the appalling domestic monetary contraction owing to the unreasonable return to gold standard. Such contraction choked bank loans especially towards small and fragile firms in the fabric industry. [Japan's economy had relied especially heavily on silk production in the early days of Meiji industrialization.] Facing the hardship, these entrepreneurs were forced to sell their products at damping prices, cut wages and fire some parts of their employees. Consequently, prominent deflation progressed.

Otaki sees the return to the gold standard as the problem, then. Like Keynes quoted above, Otaki is half right. Yes, returning to the gold standard can wreak havoc on an economy, but only in the way that restoring law and order occasionally wreaked havoc in Tombstone. Wyatt Earp had to crack a few heads to get folks to settle down. When “subtle investors” saw the sheriff on the horizon, they stuffed their carpetbags full of the locals’ flatware and hightailed it out of town. But this is hardly the sheriff’s fault.

Amazingly, in the very next paragraph after the one quoted above, Otaki blames the “current prolonged stagnation” in Japan on “easy monetary policy.” Otaki wants to contrast this with the Showa Depression, but on closer analysis it is obvious that the two things are the same. Keynesianism is the hocus pocus that seeks to cover over naked theft with highfalutin words. It is hard to see how Otaki can reconcile his support for Keynes with statements such as this:

The stimulations to the economy, which only involve the maintenance of the current spurious prosperity, are immoral, because such policies and projects gravely disturb the income distribution of the future generations via the debt-management policy. The imprudence in the fiscal policy and the huge scale project of the private sector stems [sic] not only from moral hazard in the limited liability but also from the illusion based on the rootless *expansionism* [emphasis in original] that is a negative inheritance of the High Growth Era.

Otaki seeks to accomplish this with an appeal to Burke, and to measured reform overall. But as Otaki’s own telling of just recent Japanese history makes clear (and as a wider survey of Japanese history, or of any other country’s history, will confirm), it is not reform that is the problem, but the so-called reformers. The weakness of any economy boils down essentially to just this: some people will try to hijack it via its money system and turn the entire thing to their own ends. There is no way to prevent this with laws and policies. There must be a sound currency, impregnable to human folly. That currency is gold.

A Japanese economy on the gold standard would be insulated from the endless boom-and-bust cycle of the Keynesian shell game. There would have been no bubble, no collapse, and no lost decades. Japanese firms would be healthy and diversified, and there would be no tax-guzzling boondoggles like World’s Fairs and Olympic



Games to dazzle the very populace which has been railroaded by the captains of crony capitalism, who always grow rich while the economy and everyone else within it grow poor.

*The Origin of the Prolonged Economic Stagnation in Japan* is a very good overview of one theory of why the Japanese economy has been in the doldrums for so long. Masayuki Otaki is certainly sincere in his belief that Keynesianism is the cure for what ails Japan. But he is also wrong. I recommend this book as a very helpful primer on some of the more esoteric aspects of Japanese economics, and also as a foil for figuring out what Keynesianism is, and why it offers no future for any economy besides more of the same.

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## BOOK REVIEW

# PEOPLE, POWER, AND PROFITS: PROGRESSIVE CAPITALISM FOR AN AGE OF DISCONTENT

JOSEPH E. STIGLITZ

NEW YORK: W.W. NORTON, 2019, xxvii + 371 pp.

DAVID GORDON\*

Joseph Stiglitz is an eminent economist, but it is evident from *People, Power, and Profits* that he is a moralist as well, and one of a peculiar sort. Early in the book, he says this:

...to answer such questions [about what to do] I have to explain the true source of wealth, distinguishing wealth creation from wealth extraction. The latter is any process whereby one individual takes wealth from others through one form of exploitation or another. The true source of “the wealth of a nation” lies... in the creativity and productivity of the nation’s people and their productive interactions with each other... it rests on... institutions broadly referred to as ‘the rule of law, systems of checks and balance, and due process.’ (pp. xiii–xiv)

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One might have been reading Franz Oppenheimer or Albert Jay Nock on the distinction between the political and the economic means. Stiglitz does spoil things a little when he says later on that “the real politik of the twenty-first century” is that those who seek to preserve the “values I articulate” will have to persuade others to follow the policies he suggests. Since *realpolitik* (one word, not two) means politics based on interests rather than ideology, this is confusing. It seems a forgivable slip, though, given Stiglitz’s seeming endorsement of a distinction basic to libertarian thought.<sup>1</sup>

In fact, though, Stiglitz means close to the opposite of what libertarians have in mind by the distinction between production and predation. For him, it is greedy capitalists and other private rent-seekers who exploit the people, and the state that maintains values.

Why does he think this? As he sees matters, equality is of fundamental importance: “The American dream of equality of opportunity is a myth: a young American’s life prospects are more dependent on the income and education of his parents than in almost any other advanced country. I tell my students that they have one crucial decision to make in life: choosing the right parent. If they get it wrong, their prospects may be bleak.” (p. 44) To clarify Stiglitz’s point, his objection is not just to the fact that some people have poor prospects, but also to the fact that some people have vastly more income and wealth than others.

How does inequality come about, if, as he says, equality of opportunity is a shared American value? The very well off, in his view, have written the rules in their favor. The government has become their tool. If he is correct, the solution seems obvious. Do we not need to curtail the power of the government? To anticipate an objection, I do not endorse Stiglitz’s commitment to equality. But if you do want equality, and you think that the rich control the government, limits on the state seem required.

Stiglitz is well aware of this contention. He says: “But here’s the rub: the powers that enable government to improve social well-being can be used by some groups or individuals within society to advance

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<sup>1</sup> After all, “as Shakespeare put it, ‘to err is human.’” (p. 263, note 20) It was actually Alexander Pope who said that, but never mind: to err is human. (Pope wrote “humane,” a standard spelling for “human” in the eighteenth century.)

their interests at the expense of others. This is sometimes termed ‘government failure,’ in contrast to market failure.” (p. 149) This of course is the familiar contention of the public choice school, ably defended by Randall Holcombe in his excellent *Political Capitalism* (2019)<sup>2</sup> The problem with attempts to compare market failure with government failure, Stiglitz thinks, is that only market fundamentalists believe that the market can operate without strong government control. “My study of economics had taught me that the ideology of many conservatives was wrong; their almost religious belief in the power of markets—so great that we could largely rely on unfettered markets for running the economy—had no basis in theory or evidence.” (p. xii). Elsewhere, he writes of a “libertarian dream.” (p. 139)

If we persist and ask why Stiglitz is so convinced of the need for a strong government hand in the economy, we confront a paradox. Stiglitz is best known as an economist for his work on the limitations of the neoclassical model of competitive equilibrium. Concerning the model, he says, “It is not robust—slight changes in assumptions... lead to large changes in results....” (p. 280, note 1) Yet he judges the free market inadequate because it fails to conform to the requirements of this model.

For example, he holds that the growth of knowledge, infrastructure, and even charitable help to the poor are “public goods” that the market cannot on its own produce efficiently according to the criterion used in this model. “This can be put another way: everyone wants to be a free-rider on the efforts of others. They can enjoy the benefits of the public goods provided by others without bearing the cost.” (p. 322, note 4) Much of his assault on the “market power” of monopolies rests on judging them by the standards of a perfect competition model in equilibrium. Prices charged by entrepreneurs that do not quickly revert to the prices that would be set in this model he deems exploitative.

Stiglitz professes great concern for the potential of the poor, but in fact he thinks that most people are irrational and require control by enlightened experts like him. In reviewing a proposal that people should be deemed owners of their personal data but should be able to consent to allowing internet companies to use the data, he says:

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<sup>2</sup> See my review in this issue, pp. 492–497.

Some say, let it be. The individual is freely deciding whether to let others have his data. But there many areas where we as a society decide to interfere in individuals' unfettered decisions. There are other settings where we forbid individuals to engage in behavior that harms only themselves, such as participating in pyramid schemes or selling organs.... Individuals don't really appreciate what is or could be done with their data...." (p. 129)

In another instance, he says: "Firms can also pry wealth from others by taking advantage of their weaknesses—for instance, enticing them to gamble away their wealth or persuading them to borrow at usurious interest rates." (p. 281, note 9)

Because people are so easily deceived by the false information they see on social media, the government needs to guide them to the truth. "We can also attempt to create more discerning consumers of information. Some countries, like Italy, are extending public media education (including about social media), making individuals more aware of assertions that are blatantly false." (p. 133. On p. 321, note 34, he fears that such programs will have only "limited efficacy.")

A substantial number of Stiglitz's complaints against the market are in fact instances of "political capitalism." For example, in a passage that will interest supporters of the Austrian theory of the business cycle, he says: "We evolved into a system of what is called fractional reserve banking, where the amount that banks hold in reserves is just a fraction of what they owe... bankers made a pretty penny lending out money... they could create loans essentially out of thin air... when they fail, taxpayers foot the bill." (p. 111) Why is this a case of market failure? Again, if the government bails out a bank or investment firm that is deemed "too big to fail," this is quintessential political capitalism.

Even if Stiglitz is right that the free market is flawed, though, would he still not need to confront the public choice point? Would not the failures of the market, such as they are, have to be balanced against the failures of the government? Stiglitz does not think so. Talk of "regulatory capture" and the like is misplaced. A dedicated group of experts devoted to public service will act impartially to secure the public good.

Designing a good, efficient regulatory system is difficult, but we've done a remarkably good job of combining expertise with checks and

balances. We want to avoid politicization of the regulatory process as far as possible... This doesn't mean that every rule is ideal... But all human institutions are fallible. We've done a creditable job of creating a framework that works. (pp. 145–46)

Sometimes, Stiglitz's bias is comical in its intensity. Thus, he mocks those in the Reagan era who said that "firms should pursue their shareholder interest," not aim at social responsibility. (p. 112) He tells us that "Milton Friedman the high priest of the Chicago School... was asserting these positions." (pp. 314–15, note 22). Yet later on, he says,

There is no individual abridgment of rights when we restrict corporate contributions [to political campaigns] indeed, one might argue the reverse, I buy a stock on the basis of my judgment of the corporation's economic prospects. It weakens the economy to have to conflate those judgments with whether I agree with the CEO's political judgments. (pp. 169–70)

He excoriates President Trump for his attacks on the judiciary: [T]aking a page from the playbook of despots everywhere... he attacked the courts themselves, undermining confidence in the judiciary and its role as a fair arbiter...." (p. 165) Immediately after saying this, Stiglitz attacks judges appointed by Republicans for their partisan decisions and for "the appointment of a grossly unqualified judge, Clarence Thomas." (p. 165). It is wrong to impugn the integrity of the Court—except, of course, when I do it.

Proposals to "pack" the Court by increasing the number of judges

could lead to a further weakening of America's democratic institutions: each side would be tempted to add further judges to the Court when they could to ensure control of the Court—until the opposing party took power. The Court is already seen to too great an extent as merely another partisan weapon; this act might confirm the perception. (p.167)

Far better would be a constitutional amendment imposing term limits on the justices. Until such an amendment is passed, "the number of positions in the Court should be increased." (p. 167)

Stiglitz perfectly illustrates a famous remark by Joseph Schumpeter: "Capitalism stands its trial before judges who have

the sentence of death in their pockets. They are going to pass it, whatever the defense they may hear; the only success victorious defense can possibly produce is a change in the indictment."

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## BOOK REVIEW

# POLITICAL CAPITALISM: HOW ECONOMIC AND POLITICAL POWER IS MADE AND MAINTAINED

RANDALL HOLCOMBE

CAMBRIDGE: CAMBRIDGE UNIVERSITY PRESS, 2018, x + 294 pp.

DAVID GORDON\*

Randall Holcombe is best known as an economist for his work in public choice, but in this impressive new book, he adds a historical dimension to public choice by combining it with “elite theory.” In doing this, he arrives at a controversial thesis: a new economic system, “political capitalism,” has come to replace market capitalism. In arguing for his thesis, Holcombe shows a remarkable knowledge of the literature in economics, political science, and sociology.

By “political capitalism,” Holcombe means the same as what is often called “crony capitalism,” and as he notes, the concept is a well-established one. There is widespread agreement by people with different political views that the American economy is

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dominated by an alliance of elite business and political interests. David Stockman and Joseph Stiglitz are usually at odds, but not here. Stiglitz argues,

“We have a political system that gives inordinate power to those at the top, and they have used that power not only to limit the extent of redistribution but also to shape the rules of the game in their favor.” Echoing those views, Stockman says... “the state bears an inherent flaw that dwarfs the imperfections purported to afflict the free market, namely that policies undertaken in the name of the public good inexorably become captured by special interests and crony capitalists who appropriate resources from society’s commons for their own private ends.” (p. 5)<sup>1</sup>

Holcombe contends that political capitalism is a new system, distinct from market capitalism and socialism. The term, he tells us, comes from Max Weber, who used it to “describe the political and economic systems of ancient Rome.” (p. 8). Holcombe applies the concept to contemporary America. “The analysis that follows concludes that political capitalism, in which the political and economic elite control the system for their own benefit, is not market capitalism and should be analyzed as a separate economic system.” (p. ix) It is this thesis that I should like to examine.

He argues for it by extending the public choice analysis of government by James Buchanan and Gordon Tullock ([1962] 1999). These economists challenged, though they did not altogether reject, the standard neoclassical contention that the free market cannot adequately supply public goods and so needed to be supplemented by state intervention. In the standard view, economic actors motivated by self-interest will tend to “free ride,” relying on others to produce public goods. The consequence is an underproduction of them.

Buchanan and Tullock posed a devastating question that weakened the force of the standard view’s policy conclusions, though doing so without challenging the assumptions of the neoclassical model. Why assume that government policymakers are less self-interested than market actors?

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<sup>1</sup> Besides the many works that Holcombe cites, the outstanding book of Hunter Lewis, *Crony Capitalism in America* (2013), deserves mention in this connection.

Government is not omniscient. Policymakers do not have all the information necessary to allocate resources to match the theoretically optimum welfare maximum. Government is not benevolent. People in government look out for their own interests just as people do in the private sector. Their incentives need to be taken into account to understand how public policy works in the real world. (p. 14)

Buchanan and Tullock rejected theories of group exploitation, but Holcombe does not agree:

Buchanan and Tullock “also reject any theory or conception of the collectivity which embodies the exploitation of a ruled by a ruling class. This includes the Marxist vision, which incorporates the polity as one means through which the economically dominant group imposes its will on the downtrodden.” The public choice approach to analyzing political decision making, as Buchanan and Tullock see it, leaves no room for the group behavior and elite theories that are the subject of this chapter [and book]. (pp. 64–5)

How does Holcombe accept group exploitation theories without rejecting Buchanan and Tullock’s stress on the motivations of individual actors? The key to the mystery lies in the Coase theorem.

When transaction costs are low, people can bargain to allocate resources in a way that maximizes the value to the members of the low-transaction cost group---the people who are able to bargain. When transaction costs are high, people will not be able to bargain to allocate resources to maximize the value to them.... The people in the low-transaction group bargain with each other to make public policy. The people in the high-transaction cost group... find themselves subject to the policies designed by those in the low-transaction cost group. Those in the low-transaction cost group are the elite; those in the high-transaction cost-group are the masses. (p. 76)

This difference in transaction costs permits the continuity over time that elite theory requires. So long as the difference persists, long-lasting dominance by an elite group or class is possible. For example, incumbents in Congress, regardless of party, are often allied against challengers. Owing to the difficulty of ousting them, they can retain power for a substantial period of time.

Those who have political power conspire to keep it, and have more in common with each other than with others in their same party who do not

have that power.... The more significant dimension of political competition is between those who with power versus their challengers for that power, not the competition of one party against another. This is true in political capitalism, but also true of government in general. (p. 191)

Holcombe devotes a great deal of attention to the mechanisms of rent-seeking and regulatory capture, by which elites in government join forces to exploit the masses. It is sometimes difficult to tell whether government or business interests dominate the coalition. In one maneuver, the legislature will threaten to pass laws that would adversely affect certain interests, inducing the interested parties to offer "donations" to induce the legislature to turn its attention elsewhere. "Those in government have an incentive to extract payment in exchange for legislative action, or inaction, and those who are paying have an incentive to continue paying to avoid having costs imposed on them." (p. 129)

Holcombe's argument within its own terms is powerful, but it suffers from a limitation that the more wide-ranging approach of Murray Rothbard avoids. The public choice school says, in effect, "Politicians are not impartial public servants, aiming for the good of all. They too are self-interested actors." Everyone's dominant motivation is to gain wealth, and ideological considerations play a minor role. Why, for example, do incumbents want to remain in power? The primary reason, as Holcombe views the matter, is to extract economic rents.

Rothbard allows far more room to those dominated by ideas, though he also emphasizes people's economic self-interest. People made the American Revolution, for example, in part because they genuinely believed in the ideals stated in the Declaration of Independence. Lenin genuinely believed in communism: he did not start the October Revolution to make himself a millionaire. It is of course true that both of these revolutions also benefited some at the expense of others.

To this contention, there is a well-known public choice response, best expressed in Gordon Tullock's *The Social Dilemma* (1974). Revolutionary action is a public good, and ideological revolutionaries will prefer to free ride on the actions of other revolutionaries, thus avoiding costs to themselves. Even if this analysis is correct, it proves less than Tullock and other exponents of public choice

think it does. Tullock has applied the standard neoclassical analysis of public goods to revolutions, but, as previously mentioned, the standard model concludes that a public good will not be supplied efficiently. It does not hold that the good will not be supplied at all. If Tullock is right, perhaps we have less than the efficient quantity of ideological revolutions. But the historical record shows that we have some of them.

Given the malign effects of political capitalism, Holcombe naturally wonders what can be done to restrain it. He says that his book is concerned primarily with an analysis of the system rather than remedial action, but he does suggest that limiting the power of the state through constitutional checks and balances is desirable. Such limits hold some promise to impede a rapacious government. The Progressive movement of the late nineteenth and early twentieth centuries favored government action to limit corporate predation, but this did not work: “The Progressive ideology legitimizes the use of force for the economic benefit of some at the expense of others.” (p. 230) Holcombe’s suggestions are all to the good, and he has written in greater detail with insight and erudition about this topic in *From Liberty to Democracy* (2002).

There is another limit to political capitalism, and explaining it requires us to challenge Holcombe’s central thesis that political capitalism is a new economic system. From a Misesian point of view, there are no intermediate economic systems between capitalism and socialism. As Mises remarks: “With regard to the same factors of production there can only exist private control or public control.” (Mises [1949] 1998, 712) Measures of the sort analyzed in Holcombe’s book hamper the free market, but they do not provide an alternative way to allocate resources efficiently. If political capitalism *were* a “third system,” it would be faced with the calculation problem. Because economic calculation requires a free market, political capitalism is inherently parasitic on the free market and this is a barrier to the damage it can do. Given its bad results, that is small consolation.

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## BOOK REVIEW

# REFLECTIONS ON ETHICS, FREEDOM, WELFARE ECONOMICS, POLICY, AND THE LEGACY OF AUSTRIAN ECONOMICS

ISRAEL M. KIRZNER. EDS. PETER J. BOETTKE AND FRÉDÉRIC SAUTET  
CARMEL, IND.: LIBERTY FUND, 2018, XIV + 782 PP.

DAVID GORDON\*

Everyone interested in Austrian economics owes a great debt to the editors of the vast collection of articles by Israel Kirzner, one of the foremost students of Ludwig von Mises. Readers will find that Kirzner stresses certain themes repeatedly, and I should like to comment on two of these.

Enemies of the free market often claim that defenders of capitalism are ideologically motivated. Mises, for example, worked in Vienna as an official of the Chamber of Commerce, and he does not disguise his ardent support of the free market. Can those with other ideological commitments reasonably dismiss his views? Kirzner argues that they cannot. Economics is strictly value-free. Mises's

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personal values and political allegiances make no more difference to the validity of his economic theory than Einstein's political views do to the validity of the theory of relativity.

Kirzner puts the point in this way: "Mises, the passionate ideologue on behalf of classical liberalism insisted—in fact he *passionately* insisted—on the *wertfreiheit* of the economist. Precisely because he believed that economic science can offer powerful support for classical liberalism, he saw it is as crucially important that the reputability of that science be maintained beyond suspicion.... But the economist's teachings can have the desired effect, Mises realized, only if the economist *qua* scientist maintains an austere detachment from the political ideological debates to which the science may be able to make crucial contributions." (pp. 214–15, emphasis in original)

Even so strong a critic of the free market as Gunnar Myrdal recognized the commitment of the Austrian school to value freedom: "When Gunnar Myrdal wrote his *The Political Element in the Development of Economic Theory*... he gave the Austrian School high marks for refraining from permitting their political aims to shape their science." (p. 213)

As an example, when Mises shows that economic calculation under socialism is impossible, this conclusion is in no way dependent on Mises's own disdain for that system. It is a strictly scientific conclusion.

Important though this theme is, another theme surpasses it in interest to students of contemporary Austrian economics. Kirzner does a good deal to clear up the mystery surrounding his account of the entrepreneur, and in so doing narrows the gap between his position and the "causal realist" view that Joseph Salerno and Peter Klein have taken over and further developed from Mises and Rothbard. Some distance remains, but using material Kirzner himself provides, we can see why the causal realist account is better than its rival.

The key difficulty with Kirzner's account concerns the opportunities for entrepreneurial discovery that he holds are "out there," waiting to be found. Is this not bad metaphysics? Kirzner himself recognizes the difficulty:

My theory of entrepreneurship has sometimes been criticized as viewing the future as a kind of tapestry waiting to be unfolded: it is already there; it is simply behind the screen; it has only to be unrolled and then the future will come into the field of vision, whereas the truth surely is, the critics point out, that the future does not “exist” in any philosophically valid sense. It must be created so the notion of alertness in the sense of seeing what is out there in the future is a mistaken notion. (p. 696)

Kirzner accepts the criticism. He is not, he says, assuming that discoveries are “out there” but means only that entrepreneurs try to anticipate the future: “I recognize the philosophical validity of this kind of criticism.... I think the distinction surely is one between an *ex ante* and an *ex post* perspective.... From this perspective, the philosophical validity of the idea of future events is really not to the point. *Ex post* we look back and say: if only I had seen this coming. The opportunity was there. Does an opportunity exist? An opportunity is always something in the future: it does not exist. Yet we do talk about an opportunity existing, meaning that *ex post* we can say: well, the action I took was successful; or the action I took missed being a more proximate action that I might have taken.” (p. 695)

Has not Kirzner here come closer to Rothbard’s view that capitalist entrepreneurs appraise profit-making opportunities in the face of an uncertain future? Kirzner does not recognize this. He says, “Murray N. Rothbard... has argued that this recognition and emphasis by Mises on the role of uncertainty in the generation of pure profit is inconsistent with the interpretation which the present writer [Kirzner] has given Mises’s theory. For Rothbard, an ‘alertness’ theory of profit of profit must do away with uncertainty.... I have not been able to follow Rothbard’s reasoning on this matter....” (p. 349, note 33)

But exactly the target of Rothbard’s criticism was the view of profit-making opportunities as “out there” in the world, a view Kirzner has given up. In the article that Kirzner cites, Rothbard says:

Moreover, by stressing alertness, Kirzner is emphasizing a quality of perception, of perceiving an opportunity that virtually exists, as a real *thing* out there. In reality, however, any profit opportunity is uncertain, and rather than be a real existing entity, it must always be subject to uncertainty. It is never as simple as mere alertness. (Rothbard 1985, 281–82)



The difference that remains between Kirzner and the causal realists centers on profits and losses to the entrepreneur. The causal realists stress profits and losses to capitalist investors, but Kirzner is not satisfied: "It is true that the disembodied purely entrepreneurial function cannot be observed in the real world.... So that indeed entrepreneurial losses will, in the real world, be suffered by owners of assets. But this does not mean that the phenomenon of pure entrepreneurial loss is *intrinsically* associated with the purely capitalist function.... Entrepreneurial profit and loss is to be traced to the purely entrepreneurial function." (p. 742)

We can use points Kirzner makes elsewhere to render his claim irrelevant. In his penetrating discussion of the Chicago School's "economic imperialism" Kirzner very effectively notes that, absent the pursuit of monetary profit and loss in the capitalist market, no mechanism exists to enable good insights to drive out bad ones. "Within the setting of the market the entrepreneurial element in human action can be expected to set in motion a process of mutual discovery.... But outside the market setting.... there is nothing in the character of interpersonal interaction which suggests any systematic discovery process (analogous to the discovery process inspired in markets by the lure of pure entrepreneurial profit)." (p. 165)

In his skeptical remarks about non-market "spontaneous order," Kirzner returns to this theme. "The emergence within society of a common language, a common set of standards for weight and measurement, and common codes of social behavior, differ sharply from the emergence of a market-clearing price for wheat or for unskilled labor in competitive markets.... The demonstration that widely accepted social conventions can emerge without central authoritarian imposition does not necessarily point to any *optimality* in the resulting conventions. What is demonstrated.... by short-run coordination theory (i.e., by the theory of the free-market economy) is that there does exist a spontaneous tendency toward social optimality under the relevant conditions." (pp. 64-66)

Kirzner has thus given us sufficient grounds to render nugatory his insistence on "pure" returns to the entrepreneur outside the capitalist market. Nevertheless, readers will close the volume with admiration for Kirzner's devotion to Austrian economics, immense learning, and dialectical skill.

## REFERENCES

- Rothbard, Murray N. 1985. "Professor Hebert on Entrepreneurship." *Journal of Libertarian Studies* 7, no. 2: 281–86.

## BOOK REVIEW

# MONEY, INFLATION, AND BUSINESS CYCLES: THE CANTILLON EFFECT AND THE ECONOMY

ARKADIUSZ SIEROŃ

ABINGDON: ROUTLEDGE, 2019, x + 162 pp.

MARK THORNTON\*

Economists agree that money matters, but that agreement stops when it comes to how money matters. For example, some say it only matters in the short run while others believe that it matters in the short and long run. Austrian economists hold that money matters a great deal in concrete terms in the immediate short run and has permanent long run effects.

Given that the world economy has experienced more than a decade of radical and unproven monetary policy by central banks and half a century of fiat currencies, the effects of money are more important than ever. Professor Sieroń has produced a comprehensive review of this question and has extended the analysis of this key question in many different directions.

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The central topic of the book is the Cantillon effect which appears in the title of all but one chapter. This effect was named after Richard Cantillon, the first economic theorist. He wrote, circa 1730, that the effect of new money depended on where it was injected into the economy.

Chapter one deals with the neutrality of money, where money has no effect on the economy. Five types of money neutrality are described and examined. The assumptions made for each are explained, and in particular, all the conditions that must exist for “dynamic neutrality” are explained. The reader will no doubt come the conclusion that money is never neutral and that it could be dangerous to make such an assumption as part of one’s economic analysis.

In Chapter two, the theory of the Cantillon effect is explained. It begins with an increase in the money supply and who first receives the money. That means the increase of money changes income distribution in favor of who first receives the new money. Then, depending on the preferences of those who first receive the money, some goods will experience an increase in demand, while other goods will experience a relative decrease. This in turn changes outputs of various goods and ultimately investments. Cantillon famously noted that if the new money comes into the hands of savers, that the interest rate would decrease, but if it comes into the hands of consumers, the interest rate would increase, as entrepreneurs would need to borrow more to meet the increased demand for goods.

Chapter three recaps the Cantillon effect in the history of economic thought. Beginning with Cantillon himself, the views of David Hume, John Cairnes, and other Classical economists are examined. Then Irving Fisher, John Maynard Keynes, New Keynesians, Post Keynesians and other modern schools of macroeconomics are considered, including the Austrian school, along with a special emphasis on Milton Friedman’s approach. In general, non-Austrians tend to think that Cantillon effects exist only in the short run and the effects can be generally assumed away, whereas the Austrian economists incorporate them as central to their analysis and show that the effects are important even in the very long run.

Chapter four provides a complete classification of the various types of Cantillon effects. Cantillon’s own analysis is presented and

then extended to the modern context. Chapter five examines the Cantillon effect in the modern context of credit expansion. In chapter six, the various types of credit expansion are examined to explain the secondary characteristics of a business cycle. So, for example, if the expansion is mainly in the area of home mortgage credit, then a housing bubble results. In the next chapter, price bubbles in certain asset prices are shown to be proof *par excellence* of the Cantillon effect to which Austrian economists are alert, but which mainstream economists ignore, except perhaps in the positive light of the so-called wealth effect.

The next two chapters explore two of the more controversial topics, from the mainstream perspective. The first, chapter eight, analyzes the impact of new money on income and wealth. It is shown here that there are winners and losers from new money. For example, the Fed's monetary expansions tend to help the wealthy, banks, big corporations, and the financial industry more generally. Subsequently, as prices rise, the Fed's policy hurts retirees, those on fixed incomes and wage earners who receive the new money last, if at all. This is one reason why the Fed and most mainstream macroeconomists vigorously deny the existence and importance of Cantillon effects and adopt the assumption of neutral money. Tragically, they often get away with this ruse because the theft cannot be directly seen, except in the final result.

The last substantive chapter, chapter nine, explores the Cantillon effect in the international context. Given globalization, the structure of production is now more integrated than ever, and that is a good thing. However, as a result, new money creation by central bank will have negative international consequences. Under certain circumstances the channels of new money flow can dampen the business cycle and price inflation, but the primary impact is for major central banks, in particular the Fed, to export business cycles, economic crises, and price inflation. Obviously, the Fed would vigorously deny that it is the source of global economic instability, but others have found that this is empirically the case.

The book is concisely written and is "insight dense" and is a much-needed contribution to the literature.