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NEW-PRODUCT RESEARCH AND DEVELOPMENT: THE EARLIEST STAGE OF THE CAPITAL STRUCTURE

JAMES E. McCLURE AND DAVID CHANDLER THOMAS

ABSTRACT: New product R&D, which precedes post-launch production, is a three-stage process. First comes idea prospecting, which leads to working prototypes. Second comes productization—the conversion of working prototypes into manufacturable products with reasonable prospects of being profitable. Thirdly, firms produce pre-launch inventories. This process often involves high risk, not only due to the large amounts of time and capital investment, but also because the secrecy maintained across lateral competitors stifles market signals that ordinarily foster economic efficiency. Reconsideration of the Austrian theory of the business cycle in this light leads to additional insights about: 1) the capital consumption that occurs during the cycle; and 2) the timing of the bust that follows a boom inspired by excessive credit expansion. Our empirical study of return volatility for the period from 1996 to 2017: 1) confirms the results of a *Journal of Finance* study of the preceding period from 1975–1995; and 2) validates our analysis of new-product R&D as the earliest component of the capital structure.

KEYWORDS: research and development, R&D, business cycle, capital structure, capital consumption

JEL CLASSIFICATION: E14, E32, O30

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Our friends up north [at Microsoft] spend over five billion dollars on research and development and all they seem to do is copy Google and Apple. - Steve Jobs

I. INTRODUCTION

Austrian economics emphasizes the idea that the price and production signals of competing firms coordinate capital use across the stages of production. This idea makes perfect sense for firms whose priced products are competing on the open market. For example, the price and production decisions of competing automobile manufacturers influence one another. On the other hand, the decisions of firms engaged in *new-product* research and development are largely uninformed by the decisions of other firms engaged in the research and development of similar products. Because, by definition, new-product R&D occurs *prior* to the pricing and open market sale of products, competing firms within this stage of the capital structure are largely ignorant of each other's preparations.

In this paper, we deepen the understanding of the capital structure by unpacking the *process* that coordinates capital within the new-product R&D stage of the capital structure. The dearth of capital-coordinating signals emanating *from* the earliest stage of the capital structure is unique to the new-product R&D process. Signals, within the new-product R&D stage, are sparse for three reasons: 1) price and production signals do not exist for products still under development or prior to launch on the open market; 2) pre-launch inventories have minimal impact upon the market price of products already on the market; and 3) entrepreneurs, engaged in new-product R&D and seeking "first mover" advantage, have incentives to shroud their operations and discoveries in secrecy.

The evidence of entrepreneurial secrecy in new-product R&D can be found in the body of law dealing with trade secrets. Firms, engaged in new-product R&D, routinely require employees to sign: 1) "non-disclosure agreements" whereby employees obligate themselves to keep research and development activities secret; and 2) "invention agreements" that pre-specify the sharing arrangement for anything that employees invent during or as a

result of their work on the firm's new-products.¹ Together, the overt secrecy of entrepreneurs regarding new-product R&D and the absence of price and production signals reduce and/or delay the cost-dampening impact of inter-firm competition.

We organize the remainder of this paper as follows. In Section II, we present time lines that facilitate the understanding of: a) the roles that time and money play in sustainable new-product R&D processes; and b) the system-wide costs of entrepreneurial secrecy and the absence of competition-constraining price and production signals. In Section III, we explain how our more explicit discussion of new-product R&D: a) deepens understanding of "capital consumption" in Austrian business cycle theory; and b) offers new insights into the trigger and timing of credit expansion booms and busts. Section IV presents an empirical study that validates our emphasis upon new-product R&D as the earliest component of the capital structure—our study demonstrates for the period 1996 to 2017 the same positive association between share price volatility and R&D intensity found in a *Journal of Finance* study pertaining to the preceding period, from 1975 to 1995. A summary follows in Section IV.

II. SUSTAINABLE NEW-PRODUCT R&D

The process of new-product research and development consists, by definition, of new product research followed by new product development. We define *new product research* as prospecting for new and viable innovations (the search for working prototypes). *New product development* is *pre-launch production* consisting of: (a) the productization of cost-efficient working prototypes; and (b) the

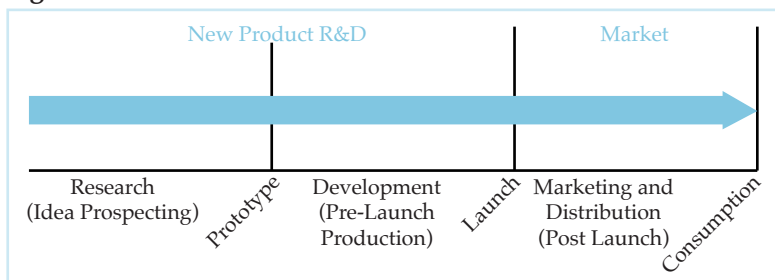
¹ "...[T]he term 'trade secret' means all forms and types of financial, business, scientific, technical, economic, or engineering information, including patterns, plans, compilations, program devices, formulas, designs, prototypes, methods, techniques, processes, procedures, programs, or codes, whether tangible or intangible, and whether or how stored, compiled, or memorialized physically, electronically, graphically, photographically, or in writing if—(A) the owner thereof has taken reasonable measures to keep such information secret; and (B) the information derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, another person who can obtain economic value from the disclosure or use of the information...." 18 U.S. Code § 1839. Definitions accessed online at <https://www.law.cornell.edu/uscode/text/18/1839>.

production of enough initial inventories to meet the anticipated demand for products launched onto the open market.

The timeline shown in Figure 1 illustrates the process by which new-product R&D *successfully* delivers new products to consumers. Successful processes begin with idea-prospecting that leads to working prototypes. Next, working prototypes evolve into products with costs that end up, after product launch, to be sufficiently low for the products to generate at least normal expected returns. Finally, firms produce sufficient quantities of pre-launch inventories to meet expected demand and be competitive on the open market. The arrow in Figure 1 shows the *successful* start-to-finish new-product R&D process: from idea prospecting, to prototype, to productized pre-launch inventory, to marketing and distribution of the completed products on the open market, and finally into the hands of consumers.

Not all investments into *new-product* R&D will be successful; in fact, many are likely to fail. This is because across the new-product R&D stage shown in the Figure 1 timeline, there is, as mentioned in the introduction, a dearth of market signals. Again: 1) neither price nor production signals can exist for products in *pre-production*; 2) pre-launch inventories have minimal impact on the market price of products already on the market; and 3) in the pursuit of “first mover” advantage, firms engaged in *new-product* R&D routinely stifle signals about their operations.

Figure 1: Timeline of How New Products Reach Consumers



The *dearth* of market signals *within* the new-product R&D stage *does not* mean that *no* market signals inform capital use within this stage. Most importantly, as emphasized by renowned Austrian school

thinkers (Mises, Hayek, Garrison, etc.), the interest rate at which firms borrow has its most significant impact upon the capital structure's earliest components. Also price, production, and other signals from active markets, *outside* the new-product R&D stage, provide crucial guidance that usefully informs, directs, and constrains new-product R&D. Summarizing, the three market signals that most clearly inform capital usage in new-product R&D are: (1) the interest rate on loanable funds; (2) the price and production signals of related products (substitutes and complements) currently being exchanged on the open (post-launch) market; and (3) the prices of the inputs available on the open market.

In line with standard Austrian business cycle theory (ABCT), so long as these market signals from *outside* the new-product R&D stage are free from artificial constraints or subsidies, we anticipate that entrepreneurial error in new-product R&D will be constrained *sufficiently* to preclude malinvestment booms. But given the absence of lateral signals *within* the new-product R&D stage, again consistent with standard ABCT, there is every reason to suppose that an excessive expansion of credit will drive the interest rate below the natural rate, and swell entrepreneurial errors in new-product R&D, leading to an unsustainable malinvestment boom. Before discussing such an unsustainable boom, we begin below by first discussing sustainable levels of the entrepreneurial errors that occur—when investment is constrained by free market prices and the natural rate of interest. In particular we discuss three types of errors: (1) superfluous discovery; (2) duplicative discovery; and (3) duplicative development. We discuss each of these in turn.

Superfluous Discovery

Superfluous discovery occurs within the idea prospecting (research) phase of new-product R&D. Superfluous discovery occurs when prototypes, or models: 1) do not work; or 2) are economic dead-ends (because the costs of productizing and launching exceed the prototypes' expected future returns. For example, in the academe, all those who have conducted significant amounts of research have made arguments that simply do not "work out." There are a variety of reasons for unpublished academic research; among them: 1) the implications of the model

are grossly inconsistent with observable, real-world behavior; and 2) the argument is unclear and /or unpersuasive to peer reviewers.

Duplicative Discovery

Duplicative discovery occurs when more than one entrepreneur, engaged in research, discovers the same working prototype, or model, simultaneously (or nearly simultaneously). Matt Ridley (2017) explains that many versions of the light bulb existed before Thomas Edison “invented” it:

Suppose Thomas Edison had died of an electric shock before thinking up the light bulb. Would history have been radically different? Of course not. No fewer than 23 people deserve the credit for inventing some version of the incandescent bulb before Edison, according to a history of the invention written by Robert Friedel, Paul Israel and Bernard Finn.

Ridley goes on to cite a famous example in the history of science—Darwin’s and Wallace’s simultaneous discovery of the theory of evolution.²

Duplicative Development

Duplicative development occurs when, following the awareness of increased demand for a product, a “swarm” of firms, not all of which will ultimately survive, make investments to bring similar products to market. For example, in early January of 2007, Apple Computer announced and demonstrated the *iPhone*. Shipment of the new device began in June of that year with great fanfare and

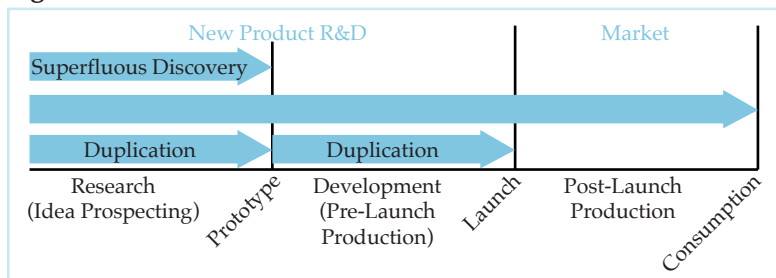
² “Charles Darwin was a methodical man. Twenty-two years after the voyage of the *Beagle*, he was still working on his definitive study. Darwin, in fact, almost waited too long. In 1858, Alfred Russel Wallace also formulated a theory of evolution, based on his studies in Brazil and the East Indies. ... [W]hen Wallace sent the manuscript of his findings to Darwin for his opinion, Darwin was astounded. Although Darwin’s first instinct was to give Wallace full credit for the theory, the two men agreed to present their papers in the same issue of the *Journal of the Linnean Society*. The next year, 1859, Darwin finally finished his book, *On the Origin of the Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*; the popular title is *The Origin of the Species*.” (Ritchie and Carola, 1983, p. 509)

significant market adoption. The success of the new smartphone served as an impetus for other firms to engage in developing competitive products. One after another, Palm, Blackberry, Microsoft, Samsung, Nokia, and the browser company Mozilla (creator of Firefox) among others, invested heavily in the development, prelaunch inventories, and launch of their smartphone offerings. The result of this entrepreneurial swarming into the smartphone space was a successful Samsung/Google Android phone and the original leader, iPhone from Apple. The others, unable to compete successfully in the crowded space, dropped out of the race or fell into obscurity.

The three entrepreneurial errors (again, superfluous discovery, duplicative discovery, and duplicative development) can reduce the overall *ex post* net benefit of the new-product R&D stage of the structure of capital. However, there is no reason to think that the market signals from outside this stage (i.e., prices of related goods, the prices of inputs, and the interest rate) will, absent distortions in these outside signals, so insufficiently constrain these errors as to cause the *ex post* net benefit of new-product R&D to be negative. Schumpeter's oxymoron, "creative destruction," is famous because new-product R&D has repeatedly delivered net benefits that are palpably positive.

This in mind, we argue that the new-product R&D process, absent governmental and/or credit distortions, will be *sustainable*—meaning that the *ex post* net benefits are positive. In Figure 2, we modify Figure 1 (which only addressed sustainable new-product R&D), to include the entrepreneurial errors of superfluous discovery, duplicative discovery, and duplicative development.

Figure 2: Sustainable New-Product R&D Timeline



As depicted in Figure 2, entrepreneurial errors appear in lengths and widths intended to depict *sustainable* levels, (that is, levels that result in the overall net benefit of new-product R&D being non-negative). As shown in Figure 2, the superfluous discovery arrow ends at the prototype line—this is the *sustainable* level, meaning that resources are *not* invested into productizing uneconomic prototypes or non-working innovations.

Similarly, the “duplication” arrow in research (this arrow represents the duplicative research) ends at the “Prototype” line. Once there is proof of the viability of a prototype, concept, or model, no more resources go to re-discovering it. In the case of the light bulb, as Ridley explained in his APEE presentation (2017), it resurfaced many times only because worldwide communications at the time limited the knowledge of the various inventors. Subsequently, once knowledge of the invention of the light bulb became widely known, reinvention of the basic bulb ceased.

Finally, Figure 2 features a “Duplication” arrow above “Development.” This arrow illustrates the level of duplicative initial inventory creation that is consistent with a sustainable new-product R&D process. Notice that this arrow ends at the *launch line*. This is not because duplicative products *never* reach final consumers, but because they *soon* cease to reach consumers—crowded out by the relatively more successful new product(s).

Returning to the cell phone example mentioned above, although many companies offered alternatives, today, only a few types remain on the market. In the period of a few decades, market competition winnowed the field. We do not know of any economist who argues that the costs of this winnowing process (the costs of duplicative development) are so large as to cast significant doubt about whether the research and development process that created cell phones delivered positive net benefits. In other words, the process that created cell phones was a sustainable one.

III. R&D MALINVESTMENT: ANOTHER SOURCE OF CAPITAL CONSUMPTION

The original Mises/Rothbard/Hayek renditions of Austrian Business Cycle Theory (ABCT), as Salerno (2012, p. 15) explains,

all agreed that 1) “malinvestment,” excessive investment in the earliest stages of the capital structure, is an essential component of the boom; and 2) “overconsumption” is an essential component of the boom, albeit with Hayek being “less emphatic.” In addition, “capital consumption” resulting from overconsumption during the boom, Salerno (p. 21) explains, is what ultimately leads entrepreneurs to abandon the “wholly new investment projects” undertaken during the boom.³

Our focus and more explicit discussion of new-product R&D, as the earliest component of the capital structure, provides a complementary explanation for the “capital consumption” that takes place during the boom (setting up an inevitable bust). Salerno’s emphasis that it is “wholly new investment projects”, in the earliest stages of production, that will be incentivized by the credit expansion (many of which will have to be abandoned due to “capital consumption”), dovetails with our focus on new-product R&D as the *earliest* component of the capital structure.

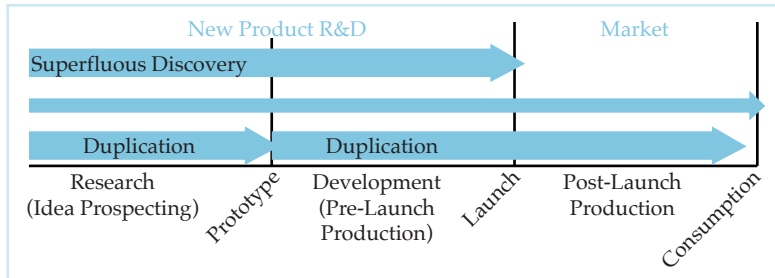
The additional source of capital consumption, that our unpacking of new-product R&D exposes, is straightforward. An artificially low interest rate, caused by the overexpansion of credit, will result in the bloating of Figure 2’s *sustainable* levels of superfluous discovery, duplicative discovery, and duplicative development (levels that were sustainable at the natural rate of interest) into *unsustainable* levels (levels incentivized by the artificially low interest rates). For complete clarity, Figure 2’s depiction of the *sustainable* R&D timeline is modified in Figure 3’s depiction of an *unsustainable* R&D time line.

Comparing Figures 2 & 3, the bloating of superfluous discovery, duplicative research, and duplicative pre-launch production is obvious. As documented and emphasized by Salerno (p. 5), “Austrian theory is *not* an ‘overinvestment theory’ of the business cycle and was never construed as such by its most notable proponents.” In line with Austrian theory and tradition, this means

³ “[T]he increase in the prices and profitability of consumer goods diverts factors from higher stages to consumer goods’ industries, thereby restricting the supply of resources available to add to or even replace the stock of capital goods. This is what Austrian economists call “capital consumption,” which is a pervasive feature of the boom.” (Salerno, p. 16)

that the bloating of the arrows in Figure 3, relative to Figure 2, is *not* overinvestment, but rather *malinvestment*.

Figure 3: Unsustainable R&D (bloated Superfluous Discovery and Duplication)



In one crucial respect, malinvestments specific to the new-product R&D stage are like malinvestments in early stages of the capital structure generally. All malinvestments arising from credit expansion contribute to what Salerno (p. 22) aptly describes as the "... 'hole' in the middle stages of the structure of production, which is 'papered' over by profits and capital gains caused by the falsification of monetary calculation." In one important respect, however, malinvestments in new-product R&D are unique. As we explained earlier, lateral competitors engaged in new-product R&D, with their products not on the market, are in the dark because they are literally uninformed by the price and production signals of one another.⁴

The uniqueness of new-product R&D malinvestment is important because it offers new insights into: 1) why new-product R&D malinvestments will tend to pile up for a longer period than will malinvestments where price and production signals are present; and 2) what can trigger the bust, and when it will occur. Current Austrian explanations of what will trigger the bust, and when, are unspecific. Garrison (2001, p. 72), for example, explains only that "at some point in the process. . . entrepreneurs encounter

⁴ Recall from our earlier discussion that: 1) products under development are not yet on the market; and 2) in the pursuit of "first mover" advantage entrepreneurs in new-product R&D maintain secrecy about their activities.

resource scarcities that are more constraining than was implied by the patten of wages, prices, and interest rates that characterized the early phase of the boom. Here, changing expectations are clearly endogenous to the process.”⁵

Inspection of Figure 3 suggests an explanation of what can trigger the bust, and when. Recalling from our previous discussions that the capital usages within the new-product R&D stage are non-signal emitting, it becomes apparent that the “launch” line is key to understanding what triggers the bust. Again, prior to launch, there are no price and production signals to constrain lateral competitors. It is at the time of product launch, that price and production signals for newly developed products first emerge and begin to constrain and coordinate capital usage across the stages of production. All that need occur to trigger a crisis is for an excessive amount of duplicative pre-launch inventory to hit the market simultaneously, or nearly so, in a Schumpeterian swarm.⁶ This insight can improve our understanding of the timing of monetary inspired crises as illustrated by the two cases examined in the next section.

⁵ Similarly, Salerno (p. 22) explains:

As the boom continues, firms confront an increasing scarcity of the resources necessary to [for example] fully utilize the new mining and oil drilling equipment to construct the hydroelectric plant and to engineer and mass produce the new generation of aircraft. In a strictly metaphorical sense, then, we may say that the lengthened structure of production cannot be ‘completed.’ The anticipated demands for the products of the higher stage investment projects... do not materialize because of the greater scarcity and costliness of the complementary labor and capital needed to profitably transform these products into lower order capital goods.... From an economic point of view, malinvestment and capital consumption cause the structure of production to disintegrate into pieces that cannot be fitted back together again without a protracted recession-adjustment process.

⁶ An anonymous referee indicated that he/she, in discussing R&D as the earliest stage, emphasizes “the bringing to market of new capacity as a critical trigger (rather than pre-launch inventories).” Both are important, because both new capacity and the pre-launch inventories hitting the market can, if of sufficiently large magnitude, cause the price of competing products to collapse—and the price collapse is the defining characteristic of the bust. Empirical assessment of the relative importance of the new capacity relative to the launch of new inventories is beyond the scope of this paper.

IV. EVIDENCE OF GREATER VOLATILITY IN R&D-INTENSIVE FIRMS

According to Austrian business cycle theory, excessive credit expansions drive the interest rate below the natural rate and, thereby, incentivize overinvestment in the earliest components of the capital structure. In line with this theory, it is expected that the uses of capital in the earliest stages would be more volatile over the business cycle as the interest rate deviates from the natural rate. In this paper, we have focused attention upon new-product R&D (pre-production investment) because it is the earliest component of the capital structure and because the activities of businesses in the new-product R&D space are *sequestered*—the price and production signals that ordinarily constrain and coordinate the stages of post-product-launch production literally do not exist to coordinate and constrain pre-production enterprises. If this focus is apt, then, empirically, we should expect to see greater volatility in the values of firms that are more heavily engaged in new-product R&D.

A. Extant Empirics on R&D Intensity and Return Volatility, 1975–1995

A relatively recent study in the *Journal of Finance* provides evidence on the impact of new-product R&D on return volatility over the period 1975 to 1995. Chan, Lakonishok and Sougiannis (2001, p. 2431) find that “R&D intensity is positively associated with return volatility.” Their explanation? Consistent with our discussion of new-product R&D as *sequestered capital*, they point out that research and development activity is, under “accepted U.S. accounting principles,” treated as an “intangible asset” and that this results in a general “lack of accounting information” which greatly “complicates the task of equity evaluation” (*op cit.*) for firms that are highly R&D intensive.⁷ To verify that these findings extend beyond the period from 1975 to 1995, the remainder of this

⁷ Furthermore, studying the impact of this lack of information upon stock market valuations is important, they argue, because of the recent, “dazzling growth” in R&D intensive industries—“at year-end 1999, the technology sector and the pharmaceuticals industry together account for roughly 40 percent of the value of the S&P 500 index.” (*op cit.*, pp. 2431–2432).

section empirically investigates the relationship between R&D intensity and return volatility for the period from 1996 to 2017.

B. A Study of R&D Intensity and Return Volatility for 1996–2017

The purpose of this empirical study is to test the hypothesis that the sequestered nature of new-product R&D implies that firm share-price return volatility increases as R&D intensity rises. Our study presents a series of four OLS panel-data regressions that estimate, for alternative specifications, the statistical and economic significance that new product R&D has on firm volatility. The regressions estimate the coefficient of three-year trends in the new product R&D (*RD_Trend*) of 3,668 publicly traded firms as a predictor of the dependent variables, *Market_Beta* and *Total_Volatility*.

Investors regularly rely on *Market_Beta* as a measure of potential risk, reflecting the volatility of a firm's stock price compared with that of the market as a whole. A beta of 1 indicates that the firm's volatility mimics the volatility of the market, while a beta greater than 1 reports the percentage increase in volatility of a stock above the volatility of the market. A beta less than 1 indicates a percentage decrease in volatility in comparison to that of the market.

To control for potential omitted variable bias, we have included the natural log of each firm's annual total revenues as well as annual net income as a percentage of total revenues. All regressions include both year and firm fixed effects, to control for aggregate movements in the market (business cycles) and for attributes of firms and industries.

The data we use are from *WRDS-Compustat*. Table 1 presents descriptive statistics on the variables used in the regressions. As shown in the table there are 32,121 observations of which, for each firm, there are up to 21 annual observations (1996 to 2017.) The years 1993 to 2017 are included in the data. The years 1993 to 1995 are included to calculate the three-year averages of total revenues and total R&D expenses used in the regressions. The market beta values range from 0 to 16.42, representing a broad range of volatility compared to the market volatility of 1.

Table 1: Summary Statistics

Variables	Labels	N	Mean	StdDev	Min	Max
Year	Year of Observation	32,121	2006		1993	2017
Beta_Market	Beta Against Market	32,121	1.281	0.876	0	16.42
Tot_Volatility	Total Firm Volatility	32,121	0.147	0.0935	0	2.445
Net_Income	Income as % of Revenue	32,121	-0.0153	0.325	-2.999	0.996
LN_Total_Revenue	Nature Log of Revenue	32,121	5.872	2.176	0.00399	13.12
RD_Intensity	Three Year Trend in RD	32,121	0.0759	0.107	0	0.969

Total Volatility represents the range of volatility on a firm basis over a three-year period. The Net Income values represent the actual net income divided by Total Revenues or a percentage of Total Revenues. The natural log of Total Revenues is calculated by taking the natural log of the Total Revenues in millions. The *RD_Intensity* variable is computed by taking the total R&D expense for the current year and the two prior years and dividing the total by the total of revenues over the same three years.

1. Estimation Methods

To assess the relationship between share-price volatility and R&D intensity, we estimate the model

$$(1) y_{it} = \beta RDIntensity_{it} + \alpha X_{it} + \mu_i + v_t + \varepsilon_{it}$$

where y_{it} , depending on the specification, is either the *Market Beta* (a standard measure of performance volatility) or *Total Volatility* of each firm (i) in year (t). The vector $RDIntensity_{it}$ includes the average of the new product R&D as a percentage of total revenues for current year (t) and the previous two years. In estimations in which *Market Beta* is the dependent variable, the coefficient estimates on $RDIntensity_{it}$ measures the percentage impact of an increase in R&D as a percent of total revenues on *Market Beta*—a 1 percent increase in $RDIntensity_{it}$, the estimated coefficient is the

predicted increase in *Market Beta*. When the dependent variable is *Total_Volatility*, a 1 percent increase in $RDIntensity_{it}$ results in an increase in the total volatility of the firm's value by the percentage reflected by the coefficient.

All regressions include firm and year fixed effects, μ_i and v_t respectively. Year fixed effects capture price movements in the market that are largely systemic and often representing business cycle impact. Firm fixed effects capture time-invariant firm observable and unobservable variables, such as product market focus. The identifying assumption in our model is that firm trends are parallel.

The X_{it} vector in the regression model includes firm financial variables such as the log of total revenues and net income as a percent of total revenues, aggregated to the firm and year level. We include these variables to control for the possibility that changes in firm size and profitability might affect volatility.

2. Results

The estimation results of our empirical study are shown in Table 2. The table includes two sets of regressions run against *Market Beta* (regressions 1 and 2) and two run against *Total Volatility* (regressions 3 and 4.) In the first regression, column (1) of Table 2, the control variables for *Total Revenue* and *Net Income* are omitted to provide a comparison for evaluating their impact when included as shown in regression (2). The coefficient of *RD_Intensity* is 0.928 and is significant at the one percent level, suggesting that an increase of one percentage of total revenues expensed on R&D will result in an increase in the firm's market beta of 0.928 or approximately 92.8 percent—an economically significant increase.

In the second regression, column (2) of Table 2, the control variables for *Net Income* and *Total Revenue* are added into the model. The coefficient on *RD_Impact* declines from the first regression to 0.629, remaining significant at the one percent level and suggesting that an increase of 1 percent in the percentage of total revenues expensed on R&D will increase the firm's market beta by 62.9 percent. The control variables suggest, as expected, that firms with higher revenues and profits will have lower beta values and thus lower volatility.

Table 2: Empirical Findings, 1996–2017; Effect of Research and Development Intensity on Stock Volatility

Variables	(1) Market Beta	(2) Market Beta	(3) Total Vol	(4) Total Vol
RD_Intensity	0.928*** (0.0967)	0.629*** (0.0995)	0.136*** (0.0117)	0.0469*** (0.0108)
LN_Total_Revenue		-0.0139*** (0.00515)		-0.0144*** (0.000644)
Net_Income		-0.204*** (0.0312)		-0.0326*** (0.00316)
Observations	32,121	32,121	32,121	32,121
Number of Firms	3,654	3,654	3,654	3,654
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes

Notes: Statistical significance at the 0.10, 0.05, and 0.01 levels are indicated by *, **, and ***. The dependent variable for (1) and (2) is market beta (a standard measure of stock volatility) and for (3) and (4) total volatility, which is the volatility of each firm considered independently. All regressions include firm and year fixed effects and report robust errors.

In the third regression, column (3) of Table 1, the control variables for *Total Revenue* and *Net Income* are omitted to provide a comparison for evaluating their impact when included as shown in regression (4). The coefficient of *RD_Impact* is 0.136 and is significant at the one percent level, suggesting that an increase in the percentage of total revenues expended on R&D will result in an increase in the firm's total volatility by approximately 13.6 percent—an economically significant increase.

In the fourth and final regression, column (4) of Table 1, the control variables for net income and total revenue are included in the model. The coefficient on *RD_Impact* declines from the first regression to 0.0469, remaining significant at the one percent level and suggesting that an increase of 1 percent in the percentage of total revenues expended on R&D will increase the firm's market beta by 4.69 percent. As in regression (3), the control variables suggest a lower level of total volatility when a firm has higher revenues or net profits.

3. Summary of our empirical findings for the period 1996–2017

The empirical results of the four panel-studies reported in Table 2 strongly suggest a causal correlation between increases in the percentage of revenues expended on new product R&D and significantly higher levels of price volatility. This finding is consistent with our hypothesis that the sequestered nature of new product R&D will lead to greater error on the part of investors in forecasting—resulting in greater volatility.

V. OVERALL SUMMARY

According to Austrian business cycle theory, excessive expansions of monetary credit cause malinvestment in the earliest component of the capital structure. In this paper we have analyzed the implications of *new-product R&D* in its role as the earliest uses of capital. As we have explained, new-product R&D can be broken down into three sequentially occurring stages: 1) a research stage that discovers potential new products; 2) a development stage to turn the potential products into working prototypes and productize them; and 3) a final stage to develop (produce) *pre-launch* inventories. Throughout these three stages, capital is *sequestered*—for these pre-production stages laterally competing firms are in the dark about the prices and production that will, following product launches, emerge onto the open market. Consistent with this sequestration of capital in the earliest stages, we find that, consistent with a previous empirical study for the period 1975 to 1995, higher return volatility is associated with higher R&D intensity. By identifying three stages of new-product R&D as the earliest component of the capital structure, greater insight is possible into what will trigger malinvestment busts and when they are likely to occur.

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PROTECTED LYING: HOW THE LEGAL DOCTRINE OF “ABSOLUTE IMMUNITY” HAS CREATED A “LEMONS PROBLEM” IN AMERICAN CRIMINAL COURTS

WILLIAM L. ANDERSON AND ANTHONY G. STAIR

ABSTRACT: In his famous 1970 paper that raised issues about “lemons” problems in markets in which asymmetric information places at least one party to an exchange (usually buyers) at a big disadvantage, George Akerlof wrote that if dishonesty continues, a “Gresham’s Law” situation can arise in which the bad products will drive good products out of certain markets. We apply not only Akerlof’s analysis, but also analysis from Mises (1944) and Rothbard (2004) and others, along with various theories of regulation, to show how the legal doctrine of prosecutorial immunity creates a “lemons” problem in criminal courts through moral hazard. Because prosecutors are immune both to lawsuits and most disciplinary procedures that private attorneys face when accused of misconduct, prosecutors have the incentives to hide evidence, and lie in court to gain convictions. This is especially true since convictions are important to career advancement. While criminal courts are not the same as private markets, nonetheless honest information is vital to the workings of both. Markets, however, have mechanisms for dealing with asymmetric information, both legal and economic, but the courts are much more resistant to measures used to ensure all involved parties have access to the truth. This paper examines the situation, including reasons for providing prosecutors with absolute immunity, and concludes that

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abolishing such immunity not only would result in fewer wrongful convictions, but also provide incentives for prosecutors to be more accurate in presenting evidence in criminal cases.

KEYWORDS: asymmetric information, lemons problem, Gresham's Law, criminal law, common law

JEL CLASSIFICATION: B4, H1, H4, H7, K1, K3, K4

1. INTRODUCTION

On November 4, 2009, the U.S. Supreme Court heard arguments in the *Pottawattamie County v. McGhee* case in which the High Court was to decide whether or not to overturn or modify its 1976 *Imbler v. Pachtman* decision in which it had ruled that prosecutors in criminal cases, both state and federal, are protected by absolute immunity from lawsuits for actions they may take relative to their prosecutorial duties. The prosecution in the *Pottawattamie* case allegedly fabricated evidence to convict two black teenagers of murder (Rosenzweig and Shatz, 2009), only to see the verdicts overturned after the men had served 25 years in prison.

Lynch and Shapiro (2009) write about the lawsuit that the two wrongfully-convicted men brought against Pottawattamie (Iowa) County and the prosecutors:

After the convictions were overturned for prosecutorial misconduct, McGhee and Harrington sued the county and prosecutors. The defendants in that civil suit invoked the absolute immunity generally afforded prosecutors to try to escape liability. After the Eighth Circuit ruled against them, the Supreme Court agreed to review the case. (p. 1)

According to Richey (2009), prosecutors made an especially egregious argument in their defense claiming there was “*no free-standing constitutional right not to be framed.*” (Emphasis ours) The facts of the case—that prosecutors framed innocent people in order to win a conviction—were morally repugnant to most observers. Nonetheless, then-U.S. Solicitor General Elena Kagan (before she joined SCOTUS herself) wrote in a friend-of-the-court brief in favor of the prosecutors: “A prosecutor, however, may receive absolute immunity from suit for acts violating the Constitution *in order to advance important societal values.* This Court’s cases recognize a

common law tradition of immunity that ensures that prosecutors are free to carry out their work ‘with courage and independence.’¹ (Emphasis ours)

The Supreme Court never ruled on the case, as the two men settled with Pottawattamie County before the court could act. However, had SCOTUS followed its past rulings, the prosecutors would have been protected and the defendants left with no recourse. Lithwick (2009) notes that during the proceedings, Justice Sonia Sotomayor also pointed out that neither of the two prosecutors faced any disciplinary procedures, which indicates that even the entities that allegedly serve as watchdogs against prosecutorial misconduct officially had no problems with their actions.

Pottawattamie in a broader context is hardly unusual, the claim that defendants have no “right not to be framed” notwithstanding. Recently, however, prosecutorial misconduct has come under increased scrutiny. When he served on the U.S. Ninth Circuit Court of Appeals, former Justice Alex Kozinski declared in a dissent (*USA v. Olsen*, 2013) that prosecutorial immunity provides incentives for prosecutors to violate the Supreme Court’s *Brady* ruling (1963). *Brady* requires prosecutors to turn over exculpatory evidence to criminal defendants in a timely manner. Kozinski writes:

A robust and rigorously enforced *Brady* rule is imperative because all the incentives prosecutors confront encourage them not to discover or disclose exculpatory evidence. Due to the nature of a *Brady* violation, it’s highly unlikely wrongdoing will ever come to light in the first place. This creates a serious moral hazard for those prosecutors who are more interested in winning a conviction than serving justice. In the rare event that the suppressed evidence does surface, the consequences usually leave the prosecution no worse than had it complied with *Brady* from the outset. (p. 11)

As Lithwick (2009), Kozinski, and others have pointed out, prosecutors rarely are punished for misconduct, be it withholding *Brady* material or fabricating evidence. There are theoretical avenues of punishment. They include criminal prosecution of wayward prosecutors, firing offenders, or disciplining the offending prosecutor through federal or state bars. In those cases, the worst punishment

¹ Friend of the Court Brief for Petitioners, *Pottawattamie v. McGhee*, No. 08-1065.

that the bars can inflict upon an offending prosecutor is taking away the prosecutor's law license.

In rare cases, prosecutors are punished for misdeeds on the job. Two of those were related to the Duke Lacrosse Case in North Carolina, and the Michael Morton wrongful conviction in Texas; prosecutors were disbarred and served a brief time in jail. In the Duke case, prosecutor Michael Nifong brought false charges of rape and kidnapping against three members of Duke University's men's lacrosse team, claiming they had raped a stripper at a team party. The North Carolina State Bar, after investigating Nifong's conduct in the case, stripped him of his law license, and he had to resign his position as District Attorney of Durham County. (Taylor, Jr., and Johnson, 2007)

Ken Anderson withheld crucial evidence from the defense in the trial of Michael Morton, who was accused of murdering his wife. Morton served 25 years in prison before DNA evidence uncovered the actual killer, who later was convicted for the crime. For his violation of *Brady*, a judge representing the Texas State Bar made Anderson give up his law license, do 500 hours of community service, spend 10 days in jail, and pay a \$500 fine. (Ura, 2013)

Yet, these punishments meted to prosecutors are considered to be extraordinary precisely *because* they are rare. Even when prosecutors engage in serious misconduct, including subornation of perjury and withholding evidence, it is highly unlikely that they will be punished. Sullivan and Possley (2015) write that prosecutorial misconduct is widespread, but note that punishment for such wrongdoing rarely occurs, and that this problem has persisted "for many decades." Radley Balko and Tucker Carrington (2018) write about a pathologist and a dentist that for more than 20 years presented dishonest forensic testimony in thousands of criminal cases in Mississippi and Louisiana, leading to numerous wrongful convictions. However, even after the misconduct was exposed, courts in those states refuse to reopen cases in which openly-fraudulent testimony led to a large number of possibly wrongful convictions.

Balko (2013) writes that the systems of checks and balances in the courts does not work well in the age of the modern prosecutor. He writes:

... in a culture where racking up convictions tends to win prosecutors promotions, elevation to higher office and high-paying gigs with white-shoe law firms, civil liberties activists and advocates for criminal justice reform worry there's no countervailing force to hold overzealous prosecutors to their ethical obligations.

He also notes:

Prosecutors and their advocates say complete and absolute immunity from civil liability is critical to the performance of their jobs. They argue that self-regulation and professional sanctions from state bar associations are sufficient to deter misconduct. Yet there's little evidence that state bar associations are doing anything to police prosecutors, and numerous studies have shown that those who misbehave are rarely if ever professionally disciplined.

From an economic viewpoint, it is clear that the systems of incentives that prosecutors face gives them room to engage in self-interested behavior that can lead to wrongful convictions. We argue, using insights from Mises, Rothbard, and others, that the current regime of absolute immunity creates a "lemons problem" (after Akerlof, 1970) in which jurors and other decision makers in the courts receive information from prosecutors that very well might be unreliable and certainly may include outright lies. Unless a defendant has deep financial pockets and a good attorney, the untrue testimony suborned by the prosecution may never be found out.

As in marketplaces, where false or misleading information can create harm for both buyers and sellers, the integrity of the courts in criminal law depends heavily upon prosecutors and judges displaying at least some elements of a conscience and obeying the law. We argue in this paper that institutional arrangements, and especially the doctrine of absolute immunity for prosecutors, lead to information asymmetries that place the defendants at a huge disadvantage and ensure that without major scrutiny of the information presented by the prosecution, jurors and others in the court cannot make accurate assessments, which leads to wrongful convictions.

Balko (2013) seems to agree with that viewpoint:

In the end, one of the most powerful positions in public service—a position that carries with it the authority not only to ruin lives, but in

many cases the power to end them—is one of the positions most shielded from liability and accountability. And the freedom to push ahead free of consequences has created a zealous conviction culture.

We proceed in this paper in the following way:

In Part II, we examine Akerlof's 1970 paper, "The Market for Lemons," and critique his analysis employing criticisms from DiLorenzo (2011). In Section III, we examine the structures of incentives, as well as institutional arrangements that ensure that asymmetric information is built into the criminal justice system, and in Section IV, we apply economic analysis from Mises and Rothbard and others. Section V presents our conclusion.

2. AKERLOF AND INFORMATION ASYMMETRIES

Participants in market transactions often enter those transactions with unequal information, which can affect economic outcomes, something economists call asymmetric information. George Akerlof (1970) addressed how information asymmetry affects markets, citing the used car market as an example of how information asymmetry affects price in a market. According to Akerlof, in some cases, information asymmetry can eliminate a market completely, which he claims can occur even though there are buyers and sellers that could come to an otherwise mutually acceptable price for a commodity.

According to Akerlof, information asymmetry does not exist in the new car market, since neither the buyer nor seller knows with any greater probability whether or not a new car is a "lemon." However, once a car is sold and has been driven for many miles, the original buyer likely gains substantial knowledge about the car's performance—and lack thereof. He writes:

After owning a specific car, however, for a length of time, the car owner can form a good idea of the quality of this machine; i.e., the owner assigns a new probability to the event that his car is a lemon. This estimate is more accurate than the original estimate. An asymmetry in available information has developed: for the sellers now have more knowledge about the quality of a car than the buyers. But good cars and bad cars must still sell at the same price—since it is impossible for a buyer to tell the difference between a good car and a bad car. (p. 489)

This information asymmetry can cause a significant reduction in demand for used cars and a significant reduction in the price of used cars compared to new. This price is so low that the one-day owner of a previously new car cannot even receive the expected value of a new car in the used car market. Akerlof writes:

Gresham's law has made a modified reappearance. For most cars traded will be the "lemons," and good cars may not be traded at all. The "bad" cars tend to drive out the good (in much the same way that bad money drives out the good). But the analogy with Gresham's law is not quite complete: bad cars drive out the good because they sell at the same price as good cars; similarly, bad money drives out good because the exchange rate is even. But the bad cars sell at the same price as good cars since it is impossible for a buyer to tell the difference between a good and a bad car; only the seller knows. In Gresham's law, however, presumably both buyer and seller can tell the difference between good and bad money. So the analogy is instructive, but not complete. (pp. 489–490)

Akerlof argues that since this situation causes the price of used cars to drop even farther, this in turn further increases the probability that only lemons will be offered for sale in that market. What results is a vicious cycle in which dropping prices increases the probability that only lemons will be offered for sale, which further drops the prices. In the extreme, no market for used cars would exist. Akerlof extends his analysis to other examples, such as insurance.

In the insurance market for patients over 65 years old, asymmetry of information also exists. The patient knows the probability he will need insurance; the company does not. This causes the company to raise the price of insurance. But, as the price rises, there is an increased probability that only people that perceive themselves as lemons will want to buy insurance. This forces the insurance company to raise prices more, which further increases the probability that only lemons will seek to buy insurance. This is the principle of adverse selection. As the price rises, only the very sick want insurance.

The potential for dishonest dealings also causes an information imbalance in markets. The seller knows if he or she is dishonest, the buyer does not. The probability of dishonest dealings lowers the price that buyers are willing to offer. As the price falls, there is a higher probability that only dishonest sellers will participate in

the market. Therefore, the potential for dishonest dealings drives honest sellers out of the market. This is particularly true in underdeveloped countries where quality variances are greater. Asymmetric information combined with the potential for dishonesty on behalf of the sellers and huge quality variance in commodities combine to completely eliminate some markets in third world countries. This happens even though there are potential buyers and sellers who could agree on a price exclusive of the presence of dishonesty. He writes:

The presence of people in the market who are willing to offer inferior goods tends to drive the market out of existence—as in the case of our automobile “lemons.” It is this possibility that represents the major costs of dishonesty—for dishonest dealings tend to drive honest dealings out of the market. There may be potential buyers of good quality products and there may be potential sellers of such products in the appropriate price range; however, the presence of people who wish to pawn bad wares as good wares tends to drive out the legitimate business. The cost of dishonesty, therefore, lies not only in the amount by which the purchaser is cheated; the cost also must include the loss incurred from driving legitimate business out of existence. (p. 495)

His point regarding dishonesty is particularly appropriate for this paper, since it identifies a “Gresham’s Law” effect in potential markets where dishonesty dominates. Indeed, this paper says that if prosecutors are not punished when they introduce false information into a criminal court proceeding, it raises the likelihood that more dishonesty will occur and that people who are dishonest may well self-select into the profession of prosecutor.

Akerlof concludes his article by stating that there are counteracting institutions, including the offering of guarantees and brand names, which help to remove some of the information asymmetry in markets. Guarantees from the seller help eliminate the effects of information asymmetry in markets where the potential exists for dishonest dealings. Brand names or chains also provide information to the buyer about quality in locales where the buyer is unfamiliar. This explains, for example, why chain restaurants are much more frequent along interstates than family run local restaurants.

While Akerlof writes of economic transactions, there certainly is overlap into how people deal with information issues in other institutional settings. As we shall emphasize more than once,

criminal courts are not markets, and participants are not dealing in entrepreneurial situations involving uncertainty, profits, and losses. At least one party—the accused—is under duress and the exchanges are coerced, not voluntary. Yet, information is information; people act on it and those that are making decisions—no matter what the setting might be—generally prefer to be acting upon information that is accurate and truthful.

In regards to the counteracting institutions, Akerlof indicates that they generally present an effective mechanism to reducing uncertainty in economic transactions. Businesses that over time put inferior goods into the marketplace are punished by consumers, and the courts also can produce effective remedies for situations in which sellers fail to meet buyer expectations or engage in dishonest behavior. That is not true for criminal courts and prosecutors, however, as Kozinski and Balko point out. Instead, the lack of institutional remedies and the reluctance of the courts to punish prosecutors that give false information or lie in court stands in contrast to what occurs in market settings.

Government, Markets, and Asymmetric Information: DiLorenzo's Critique

DiLorenzo (2011) criticizes Akerlof's thesis, writing:

... so-called asymmetric information is a source of market failure is deeply flawed. Asymmetric information is essentially a synonym for "the division of knowledge (and labor) in society," which is the whole basis for trade and exchange and the *success* of markets. (p. 249)

Far from creating failure in markets, asymmetric information, according to DiLorenzo, is the basis for a market economy. Citing Hayek (1964), DiLorenzo notes that division of labor actually is a division of knowledge. He writes:

...*all* information about all products and services is asymmetrical in successful, capitalist economies because of the division of knowledge (and labor) in society. If we all had symmetrical information about all of the above tasks, none of the above-mentioned businesses and occupations would exist. It is neither desirable nor possible for everyone to have symmetrical information. (p. 252)

DiLorenzo, however, notes that while market processes deal with issues of asymmetric information, the same cannot be said for government:

When potential problems do arise, such as superior knowledge on the part of a used car dealer, marketplace competition provides a solution, as described above. No such solutions exist in government, however, which is where asymmetric information *is* a serious problem. (p. 253)

He cites “rational ignorance” on behalf of voters as an example of how governments operate on the basis of asymmetric information, but that there are few, if any, political remedies to rectify the problems. As we demonstrate in the next section, institutional barriers in the courts and a system of perverse incentives often lead to tragic outcomes, as people are wrongfully convicted of crimes.

3. PERVERSE INCENTIVES AND WRONGFUL CONVICTIONS

Markets have an abhorrence of ignorance, and according to Stigler (1968), “...our understanding of economic life will be incomplete if we do not systematically take into account of the cold winds of ignorance.” (p. 188) Thus, as DiLorenzo (2011) notes, market participants develop numerous mechanisms to better inform both buyers and sellers:

The Akerlof-inspired asymmetric information literature also ignores the implications of the dynamic nature of competition. If a used car dealer is known to be dishonest, he creates a profit opportunity for a competitor in doing so. In a competitive market more honest car dealers will take market share away from the less honest ones, precisely the opposite of the outcome predicted by Akerlof. (p. 253)

But while markets may punish dishonesty, government institutions—and especially the courts—seem to take the opposite approach in providing incentives for dishonest behavior and ensure that the kinds of information asymmetries that result in wrongful convictions not only are tolerated, but actually encouraged. Balko (2013) addresses the problem of prosecutorial misconduct, which he says is a major reason for wrongful convictions. As he points out, because prosecutors are rewarded for convictions—even if they are wrongful convictions—and rarely face punishment for

breaking the law, we should not be surprised that prosecutors do the latter. Writes Balko (2013):

There are a number of ways for a prosecutor to commit misconduct. He could make inappropriate comments to jurors, or coax witnesses into giving false or misleading testimony. But one of the most pervasive misdeeds is the *Brady* violation, or the failure to turn over favorable evidence to the defendant. It's the most common form of misconduct cited by courts in overturning convictions.

Brady violations come from the 1963 U.S. Supreme Court decision *Brady v. Maryland*² in which the court ruled that prosecutors are required to turn over all “favorable” or “exculpatory” evidence to the defense. Violating *Brady* ultimately brought down both Michael Nifong and Ken Anderson. However, as Balko notes, the Nifong and Anderson cases were extraordinary not necessarily for what they did, but that they happened at all. The reality in the courts is that most prosecutors—even those that have committed willful and egregious *Brady* violations—face no punishments. Writing about the *Connick v. Thompson* case in which *Brady* violations by prosecutors in New Orleans put a man, John Thompson, on death row for more than a decade before defense investigators found hidden evidence that ultimately acquitted him, Balko declares:

The particularly striking thing about that argument—that self-regulation and professional discipline are sufficient to handle prosecutorial misconduct—is that even in the specific Supreme Court cases where it has been made, and where the misconduct is acknowledged, the prosecutors were never disciplined or sanctioned. None of the prosecutors in *Pottawottamie v. McGhee* suffered professional repercussions for manufacturing evidence, for example. Neither did any of the men who prosecuted Thompson. In fact, there's a growing body of empirical data showing that the legal profession isn't really addressing prosecutorial misconduct at all.

Keenan, et. al., (2011) authored the *Yale Law Review* article that Balko references. The authors examine the *Connick* case in which the U.S. Supreme Court ruled in 2011 that although prosecutors

² *Brady v. Maryland*, 373 U.S. 83 (1963)

deliberately withheld exculpatory evidence from Thompson's defense team, the Orleans Parrish District Attorney's office could not be held liable, thus vacating a \$14 million verdict a civil jury rendered in Thompson's suit against Connick's office (Harry Connick, Sr., was the district attorney). They write:

...prosecutorial misconduct is a serious problem. A 2003 study by the Center for Public Integrity, for instance, found over two thousand appellate cases since 1970 in which prosecutorial misconduct led to dismissals, sentence reductions, or reversals. Another study of all American capital convictions between 1973 and 1995 revealed that state post-conviction courts found "prosecutorial suppression of evidence that the defendant is innocent or does not deserve the death penalty" in one in six cases where the conviction was reversed. Other scholars and journalists have also documented widespread prosecutorial misconduct throughout the United States.

Because the courts have limited the redress that wrongly-convicted people can receive when prosecutors have withheld exculpatory evidence or suborned perjury or engaged in other misconduct, the state bars are left to administer punishment. While state bar intervention did result in punishment for Nifong in North Carolina and Anderson in Texas, such actions by state bars are rare. As Keenan, et. al., write:

Similarly, bar discipline procedures have not proved a fruitful sanction for deterring prosecutorial misconduct. Many state bar disciplinary systems barely seem to contemplate prosecutorial misconduct as a cognizable complaint, focusing instead on fee disputes and failure to diligently pursue a client's claim.

Balko (2013) agrees, saying: "The charges against Nifong and Anderson are newsworthy precisely because they're so uncommon." In the wrongful conviction of John Thompson, for example, the only prosecutor in Connick's office disciplined by the Louisiana State Bar was a prosecutor whose role in the case was peripheral at best. The ones that actually hid evidence and lied to the courts received no punishment at all.

Gordon, Weinburg, and Williams (2003) and a 2010 *USA Today* investigation found that errant prosecutors simply are unlikely ever to be disciplined for wrongful and even illegal conduct. The

USA Today study looked at 201 cases in which federal prosecutors were judged to have engaged in misconduct. Only one prosecutor received even temporary punishment.

Writing in *Harmful Error—Investigating America’s Local Prosecutors* (2003), Gordon, Weinburg, and Williams from the Center for Prosecutor Integrity declared:

Since 1970, individual judges and appellate court panels cited prosecutorial misconduct as a factor when dismissing charges, reversing convictions or reducing sentences in over 2,000 cases. In another 500 cases, appellate judges offered opinions either dissents or concurrences in which they found the misconduct warranted a reversal. In thousands more, judges labeled prosecutorial behavior inappropriate, but upheld convictions using a doctrine called “harmless error.”

Sapien and Hernandez (2013) examined 30 cases in New York City in which appeals courts overturned convictions based upon prosecution misconduct. Of the prosecutors in those cases, only one was disciplined, Claude Stuart, losing his job and then having his law license temporarily suspended. However, for many years, according to the authors, his conduct went unchecked:

...until Stuart’s forced resignation, there were no signs that Queens District Attorney Richard Brown saw him as a problem. Instead, Stuart had garnered a string of raises, promotions, and positive performance reviews, winning a reputation as an aggressive litigator, according to records and interviews.

“We have a broken system,” said New York University legal ethics professor Stephen Gillers. “We disbar lawyers for taking two hundred dollars from a client’s escrow account, even if they return it. But there are rarely consequences for someone who has stolen someone else’s due-process rights and possibly put an innocent person in jail.”

Thus, one can say safely that the likelihood is almost zero that an American prosecutor, state or federal, will face meaningful sanctions for misconduct—even that which results in wrongful convictions of innocent people. This creates moral hazard and increases the possibility that information prosecutors present to jurors is likely to be tainted, not to mention that the lack of consequences for illegal behavior would lead dishonest people to self-select into this line of work. This “lemons problem” is made

worse, however, by the fact that prosecutors clearly are rewarded for *convictions*, not engaging in justice.

For example, in 2011, the *Denver Post* reported that former Arapahoe County District Attorney Carol Chambers paid bonuses to prosecutors in her office for convictions they won at trial.³ Although what Chambers' methods were a bit unorthodox, tying bonuses directly to a conviction rate, it is clear that prosecutors across the country are rewarded for getting convictions. Given that prosecutors are highly unlikely to be charged with misconduct no matter how egregious their conduct, one should not be surprised to see them respond positively to whatever structure of incentives exists in the legal system.

One of the problems of examining incentives in prosecutorial offices, however, is the lack of publicly-available information. Leonetti (2012) writes that prosecutors often will follow a policy of "overcharging," that is, charging a defendant with multiple crimes for a single act, or finding other corresponding charges in order to force a desperate defendant into pleading guilty instead of going to trial. In one case documented by Balko (2013), prosecutors charged one defendant with multiple counts of armed robbery, and then threatened to try each count at separate trials, which would have made an adequate defense nearly impossible, leading the defendant to go ahead and plead out.

Writing in the Wrongful Convictions blog, Phil Locke (2015) says:

...the prosecutor has no problem assembling a very long list of charges against you. The penal code has become so vast, and there are so many laws, that there's a law against practically everything. I suggest that most people are not even aware they're breaking a law when they do it, because they don't know the law exists.

Blume and Helm (2014) write that most criminal cases result in pleas, as opposed going to trial, and that often results in innocent people pleading guilty to *something* simply because they lack the resources to take charges to trial or do not have confidence that the system will work for them, and they will receive harsher

³ Fender, Jessica, "DA Chambers offers bonuses for prosecutors who hit conviction targets," *The Denver Post*, March 23, 2011.

sentences than had they just pled guilty. The plea system, Blume and Helm write, is almost completely free of judicial or legislative oversight and regulation, which makes things even more hazardous for defendants, given that prosecutors receive no sanctions for overcharging or coercing guilty pleas from innocent persons.

According to Leonetti, prosecutors engage in overcharging because they are incentivized to do so:

As opposed to seeking another way to limit prosecutorial discretion, this Article examines and evaluates an alternate cause of overcharging, one that has not received much attention from courts or in the scholarly literature: the extent to which internal personnel policies in prosecutors' offices create incentives to overcharge. Instead of focusing only on the ways in which prosecutors exercise their discretion in the criminal justice system, scholars also need to focus on the policies governing those who exercise that discretion, particularly when those policies suggest the existence of bias. Career advancement should not be the controlling factor in how charging, prosecuting, and sentencing decisions are made. (pp. 59–60)

Likewise, Balko (2013) quotes the famed criminal-defense and civil-liberties attorney Harvey Silverglate on how prosecutors are incentivized to engage in misconduct: "Publicity and high conviction rates are a stepping stone to higher office," says Silverglate. "Except in some rare cases, misconduct isn't going hurt a prosecutor's career. And it can often help," he says.

Leonetti writes:

While prosecutors have always made their reputations by winning trials, these new quantitative standards (from state and federal agencies) mean that prosecutorial success, for the explicit purposes of job evaluation and remuneration, is now measured by the number of convictions and amount of punishment, leading to reelection for district attorneys and promotion for their deputies. (p. 65)

Such forms of evaluation, she notes, leave out evaluations of unethical or illegal conduct, as they concentrate simply upon "output," with "output" meaning convictions and adjudication of cases favorable to state authorities. She adds:

Because those offices did not see training and avoiding ethics violations, errors, and disciplinary actions as relevant measures of prosecutors' performance in achieving justice, they chose to forgo this measurement. As a result, there is no data to compare how those performance measures (training, ethics violations, errors, and disciplinary proceedings) may have correlated with more traditional performance measures, such as conviction rates and the length of sentences. A strong correlation, for example, between the number of ethics violations and a prosecutor's (high) conviction rate would have been strong evidence that personnel policies that reward prosecutors for conviction rates encourage unethical behavior. (p. 65)

To give an analogy using Aklerlof's "lemons" example, the kind of prosecutorial misconduct outlined in this section and elsewhere in this paper might be compared to a used car dealer making claims about a car he sells to an unwitting customer, with the car breaking down almost immediately after the customer purchases it. When the customer complains and demands that the dealer give him a refund, the dealer refuses and turns to other employees of his business, and all of them agree that it was a good car and that the buyer should accept the results and not carp about them, and that the dealership followed all of the proper procedures for preparing the car for sale, and that it had no known defects.

Furthermore, in this particular example, the wronged buyer is prohibited from using the tort system and is told to check with government agencies that regulate used car sales. When the buyer turns to those agencies—after having discovered documented proof that the dealer knowingly lied about the car he sold—the employees of those organizations tell him that they are sorry, but that the dealer was just "doing his job" and that they will neither require the dealer to take back the "lemon" he sold nor discipline him.

It is near-impossible to imagine such a scenario in the event a car dealer sells a "lemon" to a customer. However, this was the reality that John Thompson and thousands of other wrongly-convicted people have experienced after prosecutors engaged in illegal and unethical conduct to place them behind bars. After having their freedom taken from them, sometimes for decades, they found that the judicial and law enforcement agencies so protect their employees that no meaningful redress is possible.

In the vast literature on wrongful convictions, there are some common threads, one being that prosecutors in possession of truthful evidence withheld it from the defendants and, of course, jurors and judges. Prosecutors almost always benefit personally and professionally from such actions, as it enables them to gain more convictions, and, as we have demonstrated in this paper, they usually face few or no consequences for their actions.

To make matters worse, even when the courts are made aware that prosecutors withheld evidence or engaged in fraudulent practices, they often refuse to revisit the outcomes of either guilty pleas or trials resulting in convictions. Balko and Carrington (2018) write about thousands of criminal convictions in Mississippi and Louisiana in which prosecutors used testimony from two “forensic experts,” Dr. Steven Hayne, a medical examiner, and Dr. Michael West, who claimed to be a forensic dentist.

Hayne made a number of extraordinary claims, including testifying in a trial in which he claimed that after he examined the path of the bullet wound that killed a police officer, he could tell that the bullet came from a gun in which two people pulled the trigger simultaneously. Balko (2013) explains:

In 2007, the Mississippi Supreme Court overturned the conviction of Tyler Edmonds, a 13-year-old convicted of conspiring with his sister to murder his sister’s husband. In that case, Hayne testified that he could tell by the victim’s wound pattern that two people held the gun that fired the fatal bullets—a conclusion other forensic specialists have dismissed as preposterous.

Neither Hayne nor West, whose testimony also has helped place people on death row, are now considered credible expert witnesses in the courts, but for many years, their testimony went nearly-unchallenged in Mississippi and Louisiana courts. Requarth (2018) writes:

Over the years, his “expertise” metastasized, and he proffered opinions not only on bite marks, but also on gunshot reconstruction, wound pattern analysis, fingernail scratch reconstruction, trace metal analysis, video enhancement, pour pattern analysis, tool-mark analysis, cigarette burns, arson investigations, and shaken baby syndrome. West called his ultraviolet method the “West Phenomenon” because he could see what no one else could. He matched an abrasion on a murder victim’s body

to a suspect's shoelaces. He matched a bruise on the victim's abdomen to a specific pair of hiking boots. He declared that simply by looking at a suspect's palm, he could tell that the individual had been holding a particular screwdriver several days earlier. West likened his virtuosic talents to those of violinist Itzhak Perlman and once described his error rate as "something less than my savior, Jesus Christ."

Requarth continues:

West peddled unconscionable pseudoscience in court. Typically, a bite-mark examiner would take a plaster mold of the suspect's teeth and then compare the mold to photographs of the victim's skin. If the pattern sufficiently matches up, the examiner could exclude everyone in the world except the suspect. Or at least that's how the theory goes: Bite-mark matching has never been scientifically proven. West's practices in this already-scientifically-shaky field were even more dubious. In Brewer's and Brooks' cases, as in many others, West pressed a plaster mold of the suspect's teeth directly against the victim's skin. With this method, West could have been creating the bite mark he was then claiming to have matched. In one case, West even pressed a dental mold into the hip of a comatose woman. A forensic dentist and longtime West critic posted a video of the examination on his blog. "Tampering with the evidence on the skin is likely a crime," the dentist later said. "But to create those marks on a woman who was comatose, and who hadn't given consent, is also an assault."

Despite the fact that experts from around the country have dismissed the analysis of both Hayne and West as being utterly fraudulent, Mississippi Attorney General Jim Hood—who also used Hayne's testimony when he prosecuted cases as a district attorney—refuses to revisit any of the convictions that came about (often in large part) through Hayne's testimony. (Mott, 2014) Whether or not many of these people are innocent of the crimes for which they were convicted is irrelevant to state authorities.

In concluding this section, it is clear that the problems with asymmetric information in the criminal courts are institutional in nature. The main players in the system and the ones most responsible for bringing false information into a criminal proceeding are prosecutors, who also are the most protected actors in the system, as they have almost zero accountability. In the next section, we employ analysis from Austrian economists and others to explain why the government employees and their witnesses in

criminal courts are protected to the point where even misconduct that sends innocent people to prison and death row not only goes unpunished, but the courts refuse redress to the victims of official misconduct, even leaving some of them to languish in prison.

4. BUREAUCRACY, PRIVILEGE, AND AUSTRIAN ANALYSIS

In his famous speech to a gathering of federal prosecutors in 1940, Attorney General Robert Jackson reminded his audience that their job was to do justice. He declared: "While the prosecutor at his best is one of the most beneficent forces in our society, when he acts from malice or other base motives, he is one of the worst." With apologies to George Stigler (1971), one suspects that such a speech from a modern U.S. attorney general to prosecutors would be met with "uproarious laughter."

Jackson continued:

Nothing better can come out of this meeting of law enforcement officers than a rededication to the spirit of fair play and decency that should animate the federal prosecutor. Your positions are of such independence and importance that while you are being diligent, strict, and vigorous in law enforcement you can also afford to be just. Although the government technically loses its case, *it has really won if justice has been done.* (Emphasis ours)

The modern standards that the American Bar Association lays out for prosecutors show that at least some of Jackson's idealism has not disappeared. Parts (a) and (b) of Standard 3-1.2 of the ABA's Fourth Edition of the Criminal Justice Standards for the Prosecutorial Function declare:

- (a) The prosecutor is an administrator of justice, a zealous advocate, and an officer of the court. The prosecutor's office should exercise sound discretion and independent judgment in the performance of the prosecution function.
- (b) The primary duty of the prosecutor is to seek justice within the bounds of the law, not merely to convict. The prosecutor serves the public interest and should act with integrity and balanced judgment to increase public safety both by pursuing appropriate criminal charges of appropriate severity, and by

exercising discretion to not pursue criminal charges in appropriate circumstances. The prosecutor should seek to protect the innocent and convict the guilty, consider the interests of victims and witnesses, and respect the constitutional and legal rights of all persons, including suspects and defendants.

This clearly is *not* the American criminal justice system described in sections I and III of this paper, but explaining why this is the current situation requires something much different than exhorting the players in the system to “serve the public.” If there is anything clear, the players in the system, from police to prosecutors to the judges do not serve the interests of the “public,” but rather their own interests.

Economists in the Austrian and Public Choice camps should not be surprised at this situation. Yandle (1983) wrote of his experience with the Federal Trade Commission and how oblivious its staff economists seemed to be to the problems of regulatory issues. He writes:

Not only does government rarely accomplish its stated goals at lowest cost, but often its regulators seem dedicated to choosing the highest-cost approach they can find. Because of all this, I and others in academia became convinced years ago that a massive program in economic education was needed to save the world from regulation. If we economists could just teach the regulators a little supply and demand, countless billions of dollars would be saved. (p. 13)

As he received his “education” in bureaucratic thinking, however, Yandle came to realize that the regulatory dynamic was not what he originally had imagined. He continues:

...instead of assuming that regulators really intended to minimize costs but somehow proceeded to make crazy mistakes, I began to assume that they were not trying to minimize costs at all—at least not the costs I had been concerned with. They were trying to minimize *their* costs, just as most sensible people do. (p. 13, emphasis his)

Those costs, he pointed out, included costs of making mistakes, costs of enforcement, and political costs. Those firms being regulated, he noted, also had goals that were well outside what the public perception of regulation was supposed to be. Writes Yandle:

They want protection from competition, from technological change, and from losses that threaten profits and jobs. A carefully constructed regulation can accomplish all kinds of anticompetitive goals of this sort, while giving the citizenry the impression that the only goal is to serve the public interest. (p. 13)

Most of the regulation literature focuses upon the relationship between government and private firms that government agents regulate, but while courts are entirely government entities and the analogies between the various players in the courts and those in the regulated marketplace are not exactly the same, nonetheless there are similarities. First, and most important, as McCormick and Tollison (1981) write, all of those who take part in the systems—both markets and in government—are self-interested individuals:

They (government employees and politicians) are economic agents who respond to their institutional environment in predictable ways, and their actions can be analyzed in much the same way as economists analyze the actions of participants in the market processes. (p. 5)

If one can compare the actions of prosecutors to business owners, one can apply Rothbard's analysis (2004) that individuals will seek to gain *psychic* gains and also can suffer *psychic* losses. There is one important difference, however: Should the individuals in private business—entrepreneurs and the capitalists—engage in error or disseminate false information over time, they well may suffer real economic losses, losing their own resources.

Prosecutors, on the other hand, use state-owned resources, are protected from their own personal losses by both the legal doctrine of absolute immunity and the refusal of the so-called watchdog agencies such as state bar discipline committees to hold prosecutors accountable for lawbreaking and other wrongdoing. Furthermore, their actions force *others* to use their own resources, and when prosecutors target business owners, losses and occasional bankruptcies follow.

Calton (2017) reinforces this point by likening the courts to a commons or, more specifically, a "public good" that is owned by the state, and the government players have no incentive to economize on resources financed by taxpayers. He writes:

Because the government holds a monopoly on the justice system in the United States, courtrooms are treated as public goods. For public goods, costs are socialized, so there is no *individual* cost to using this resource. From the perspective of the criminals, of course, this seems like a no-brainer—a defendant is hardly going to pay the cost of his own conviction. But the socialized costs of courtrooms remove the incentive to economize for two specific groups of people: legislators and police officers.

Calton explains that legislators can expand the criminal code to look “tough on crime” without having to use their own resources, while police gain from making more arrests, even though most of the people they collar are likely to be non-violent lawbreakers. To put it another way, the gains for the government players in the system, including police, prosecutors, judges, and lawmakers are *private* while the costs themselves are socialized.

While we use market analysis, nonetheless, we emphasize again that courts are not markets, and that plea bargain sessions are not exercises in mutual exchange. In economic exchanges, all parties involved anticipate being better off afterward, while in the courts, one party will be better off and the other will be worse off. Rothbard writes about government intervention:

On the market, . . . , *there can be no such thing as exploitation*. But the thesis of an inherent conflict of interest *is* true whenever the State or anyone else wielding force intervenes on the market. For then the intervener gains at the expense of the subjects who lose in utility. On the market all is harmony. But as soon as intervention appears on the scene, conflict is created, for each person or group may participate in a scramble to be a net gainer rather than a net loser—to be part of the intervening team, as it were, rather than one of the victims. (p.881)

Prosecutors generally are winners in their interactions with people who are accused of crimes, and given the high conviction rates and the high rates of plea bargains (that serve as convictions), prosecutors benefit well from the existing system. This does not mean that society as a whole benefits from how the courts operate, however, and when innocent people are convicted and the courts and prosecutors refuse to rectify the errors, not only are the wrongfully-convicted individuals done irreparable harm, but also family and loved ones of the victim. Furthermore, every refusal to correct

official wrongdoing that goes unpunished (and that is nearly every one of those cases) creates perverse incentives for prosecutors and judges to do more of the same.

As we have emphasized before, for all of the talk about how prosecutors “serve society,” the system is one in which many of the actors, such as prosecutors, gain individually from the system, but the benefits to others are not as clear. While it is true that most people would benefit with dangerous and violent criminals being punished and “taken off the street,” close to half of people in prison are there not for violent crimes like robbery, rape, and murder but rather for using or distributing drugs such as marijuana or cocaine. (Carson, 2018) While one can argue whether or not such substances should be legal, nonetheless usage of these substances does not necessarily post a threat to the lives and property of others.

Mises (1944) provides a number of insights into bureaucratic mind. For the purposes of this paper, we look at the “justice” system as a bureaucracy, as opposed to dealing with whether or not elected prosecutors behave differently than appointed prosecutors, a subject for later research. Commenting on the differences between private enterprise and a bureaucratic office, Mises writes:

The objectives of public administration cannot be measured in money terms and cannot be checked by accountancy methods. Take a nationwide police system like the F.B.I. There is no yardstick available that could establish whether the expenses incurred by one of its regional or local branches were not excessive. The expenditures of a police station are not reimbursed by its successful management and do not vary in proportion to the success attained. If the head of the whole bureau were to leave his subordinate station chiefs a free hand with regard to money expenditure, the result would be a large increase in costs as every one of them would be zealous to improve the service of his branch as much as possible. It would become impossible for the top executive to keep the expenditures within the appropriations allocated by the representatives of the people or within any limits whatever. It is not because of punctiliousness that the administrative regulations fix how much can be spent by each local office for cleaning the premises, for furniture repairs, and for lighting and heating. Within a business concern such things can be left without hesitation to the discretion of the responsible local manager. He will not spend more than necessary because it is, as it were, his money; if he wastes the concern’s money, he jeopardizes the branch’s profit and thereby indirectly hurts his own interests. But it is another matter with the local chief of a government agency. In spending more money he can,

very often at least, improve the result of his conduct of affairs. Thrift must be imposed on him by regimentation. (p. 46)

While no one doubts that even prosecutors face scarcity constraints (even though critics may say prosecutors have “unlimited” resources), nonetheless there is an economic calculation issue facing a defendant that prosecutors do not share. Because individuals charged with crimes are expected to pay for their own representation—or face the tender mercies of an overworked public defender that is unlikely to offer an adequate defense—they are likely to face resource problems. Prosecutors, on the other hand, are using resources of others and face a much different calculus than do defendants. Mises explains, at least in part, the process:

In public administration there is no market price for achievements. This makes it indispensable to operate public offices according to principles entirely different from those applied under the profit motive.

Now we are in a position to provide a definition of bureaucratic management: Bureaucratic management is the method applied in the conduct of administrative affairs the result of which has no cash value on the market. Remember: we do not say that a successful handling of public affairs has no value, but that it has no price on the market, that its value cannot be realized in a market transaction and consequently cannot be expressed in terms of money. (p. 47)

As Mises points out, market prices and behavior will at best impose only partial constraints upon the bureaucrat’s actions, and given that the kind of economic calculation that constrains entrepreneurs and capitalists does not fully restrain prosecutors, the system then requires restraints of another kind imposed by a political process or the whims of an administrator. However, as Yandle notes, the regulator is interested in minimizing his own costs, not to mention reluctant to limit the power of his office. In other words, there are plenty of reasons for those who either supervise the prosecutor or are able to impose discipline for prosecutorial misconduct to shirk their assigned duties, as to do so in the long run would diminish the power of the prosecutor’s office, thus reducing all of their authority.

While this paper does not advocate reform for prosecutorial offices, nonetheless it is clear that the denial of using the tort

system takes away the one remedy that one wronged by a prosecutor directly can take against his false accuser. Every other remedy—from other prosecutors charging the offending prosecutor with a crime to the state bar imposing discipline up to taking away the prosecutor’s law license—requires those who are government officials and also have a vested interest in preserving their own power and authority to do something that in the long run undermines their own power.

Such a state of affairs should surprise no one. Mises notes in *Bureaucracy* that one cannot really reform the bureaucratic institutions other than try to limit their influences. He pointed out that bureaucracies cannot run an economy with any success or replace a market. Likewise, one cannot impose “market-based” reforms upon bureaucracies; people charged with crimes cannot refuse to submit to prosecutors and the courts, and average citizens have no power over the system other than to serve on juries and, on occasion, impose their own form of “justice” through jury nullification.

By creating an atmosphere in which prosecutors nearly are invulnerable to legal accountability, the courts also have unleashed a situation in which F.A. Hayek (1944) described as one in which “the worst get on top.” Hayek—as well as Austrian economists such as Mises and Rothbard—warned that a collectivist system is more than likely to empower people who are more likely than not to abuse that power. He writes:

The principle that the end justifies the means is in individualist ethics regarded as the denial of all morals. In collectivist ethics it becomes necessarily the supreme rule; there is literally nothing which the consistent collectivist must not be prepared to do if it serves “the good of the whole,” because the “good of the whole” is to him the only criterion of what ought to be done. (pp. 146–147)

5. CONCLUSION

Twenty years ago, Bill Moushey (1998) of the *Pittsburgh Post-Gazette* introduced a 10-part series on federal law enforcement misconduct with these words:

Hundreds of times during the past 10 years, federal agents and prosecutors have pursued justice by breaking the law.

They lied, hid evidence, distorted facts, engaged in cover-ups, paid for perjury and set up innocent people in a relentless effort to win indictments, guilty pleas and convictions, a two-year Post-Gazette investigation found.

Rarely were these federal officials punished for their misconduct. Rarely did they admit their conduct was wrong.

New laws and court rulings that encourage federal law enforcement officers to press the boundaries of their power while providing few safeguards against abuse fueled their actions.

Victims of this misconduct sometimes lost their jobs, assets and even families. Some remain in prison because prosecutors withheld favorable evidence or allowed fabricated testimony. Some criminals walk free as a reward for conspiring with the government in its effort to deny others their rights.

For anyone in the Austrian or even Public Choice camps of economic analysis, none of Moushey's words are surprising. As Mises (1944) noted, for all of the idea that government employees "serve the people," the gains of employment through salaries, promotion, and prestige go to the individual government workers. Moreover, we see a "capture effect" in which those employed by government in the bureaucracies have usurped the legislative process and become virtually independent of the legislative branch, which Roberts (2000) points out accelerated during the New Deal of the 1930s, as Congress "re-delegated" many of its constitutional powers to the bureaucracies of the executive branch.

Rothbard (2004) writes that individuals act to make their "psychic revenue" greater than the "psychic costs" incurred during a particular action, and the doctrine of absolute immunity for prosecutors—and the refusal of the "watchdog" organizations to discipline prosecutors when they break the law—has the effect of lowering the real costs that they face for their actions. Likewise, their promotions, pay raises, and general prestige for "winning" in the courtroom and at the plea bargaining table falls into the "psychic revenue" category. Given that set of circumstances, perhaps one should be surprised that prosecutors ever obey the law when it comes to satisfying their *Brady* requirements.

Although this paper has dealt with the single issue of absolute immunity for prosecutors and its effects on the court systems, there is a larger area of study looking at how we observe a form of “regulatory capture” in the courts. In this case, prosecutors would “capture” the process that disciplines them, such as the state and federal bar disciplinary organizations. There exists a body of literature on regulatory capture both in and out of the Austrian tradition, and there would be rich ground for more study here.

As we noted in the previous section, the set of institutional constraints and incentives make prosecutorial abuse inevitable, and it explains the lack of desire by authorities given the power to discipline wayward prosecutors to carry out their legal duties. Because prosecutors are rarely punished for lying and presenting false evidence, along with suborning perjury, it is safe to say that the information they often present to jurors and judges is less reliable than the information given by the seller of the Akerlof used car.

While we agree that ending the legal standard of absolute immunity for prosecutors would provide for a major reform of the criminal justice system and compel prosecutors to be more truthful in their pursuit of convictions, nonetheless we also understand that the courts are unlikely to give up their self-created protections. Prosecutors, which have a strong lobbying presence both in state legislatures and in Congress, are incentivized both to illegally withhold exculpatory information in order to win cases *and* to demand continued protection for their unlawful actions, and at the present time, there is no political or administrative mechanism in existence that is likely to change the status quo. Thus, to paraphrase McCormick and Tollison (1981), we realize that at the present time, lamenting this major imperfection in the criminal justice system might be the most we can do as long as state authorities enjoy the legal monopoly to pursue their version of “justice.”

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SCHUMPETER'S REVIEW OF FRANK A. FETTER'S PRINCIPLES OF ECONOMICS

KARL-FRIEDRICH ISRAEL

Translator's Note:

This review of Frank Fetter's textbook by Joseph A. Schumpeter was brought to my attention by Dr. Matthew McCaffrey of the University of Manchester, who suggested a translation. It was originally published in German in volume 17 of the leading Austrian journal in economics in the early 20th century: *Zeitschrift für Volkswirtschaft, Sozialpolitik und Verwaltung* (Journal of Economics, Social Policy and Administration). The journal was edited by some of the most eminent economists of Austria at that time, namely, Eugen von Böhm-Bawerk (1851–1914), Theodor von Inama-Sternegg (1843–1908), who had passed away shortly before the publication of volume 17, as well as Eugen von Philippovich (1858–1917), Ernst von Plener (1841–1923) and Friedrich Freiherr von Wieser (1851–1926). The discussion of Fetter's text is part of a series of nine book reviews by Schumpeter contained in this volume. In them, he discussed new publications in the English, French and German literatures, including E. R. A. Seligman's

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Principles of Economics, William Stanley Jevons's unfinished, posthumously published *Principles of Economics, A Fragment of a Treatise on the industrial mechanism of Society and other Papers*, Léon Polier's *L'idée du juste salaire* (The Idea of the Just Wage), and H. von Leesen's German language biography of Frédéric Bastiat.

The review of Fetter's *Principles* is the last one of this series, and is also the most laudatory. Schumpeter emphasizes that the book is more than merely a textbook, and he highlights the close connection between Fetter's theory and the economics of the Austrian school. The review is therefore of interest from the vantage point of the history of economic thought. In particular, Schumpeter recognizes the importance of Fetter's classification of entrepreneurial activity—the “enterpriser's function” in Fetter's words—as just another form of labor. Without going into any detail, Schumpeter hints at the extremely important social implications suggested by this view, but then proceeds to provide a brief rejection of this position from the perspective of pure economic theory.

Karl-Friedrich Israel

Review 9:

**Frank A. Fetter, *The Principles of Economics, with Applications to Practical Problems*
New York: The Century Co. (1905)
Joseph A. Schumpeter¹**

This book surely deserves special attention, not only as a textbook that is rich in content, but also as a scientific achievement. Once again, the focus lies on theory, which is entirely based on the phenomenon of value. This is clearly brought to the reader's attention already by the structure of the book, which is oriented towards value. As such the endeavor is to be appreciated, since, if one is to base it on only one principle, it means a step towards the unification of the edifice of our science. However, by analyzing still other things besides pure theory within the same system—if one tries to fit everything into the same scheme—one is expecting too much of this value foundation. The first part [of the book] is entitled “The Value of

¹ *Zeitschrift für Volkswirtschaft, Sozialpolitik und Verwaltung*, Band 17, pp. 415-420 (1908).

Material Things” and provides a doctrine of needs, an introduction to the law of marginal utility, and other basic aspects in much the same way as most “psychological” economists would present them. These outlines, which are very attractive and clear, strike a chord with those of the proponents of the Austrian school. Indeed, Fetter is much closer to the latter than the other American theorists.

The law of diminishing returns takes a back seat and appears almost solely as a formal concession to American practice when it is given a special chapter in the section on fundamental concepts. Similarly, it is merely a terminological measure without any substantive significance when the author expands the term rent to every physical and value gain. In connection to the latter we should point to the elegant term “psychic income,” which surely deserves further use. Here, we would like to complain about just one point. The term is defined as a form of total utility, given by the product of the quantity of a good that an economic agent owns and its marginal utility. This notion of total utility can be found quite frequently in the works of notably non-mathematical theorists. It is based on the assumption that, in any given moment, all units of the good are valued equally according to their marginal utility, and hence that the total value of all available units is given by the sum of the equal values of each unit, just like the total quantity is given by the sum of the units. But this is certainly an erroneous belief. From the fact that all of the single units available at the same time are valued equally, it does not follow that the value of several of these units is equal to the sum of their single values. Instead, when it comes to the value of several units, needs of higher intensity become important that do not influence marginal utility as such, which is only determined by the least urgent need, and each time presupposes the satisfaction of the more urgent ones. This, however, is contested when we deal with larger quantities, and when evaluating the latter this needs to be taken into account. Only one unit is valued at the margin. All the others are given higher value, namely, that marginal value that would prevail without the units already given a lower value. Each unit must be given a different marginal value from which we can calculate the sum. But this means nothing else than that the total value is an integral.

The next “Division,” entitled “Capitalization and Time-Value,” starts with a theory of money. Little by little, as the result of a long

discussion, a robust theory of money smoothly breaks fresh ground. Fetter's theory points in the right direction, as this sentence shows: "money in all its money uses is an indirect agent to be judged just as other indirect agents are."² This is indeed a very useful starting point. It just goes a bit too far to use the notion of money as a tool not merely as an analogy, but to take it completely seriously and speak in the same way about income earned from the ownership of money as income earned from the ownership of a tool.

We now turn to the notion of capital and the theory of capitalization. The former is characterized by its clarity. Fetter rejects Clark's separation of capital and capital goods. What is said about capitalization is entirely up to date. The derivation of the value of capital from the value of the return is nicely illustrated with the example of the purchase of rent-charges.³ This may be the most attractive presentation of the topic, and to have clarified it, one of the largest advances in modern theory is.⁴ Only one thing is not quite in order. Prof. Fetter seems to regard the discounting of future revenues as a matter of course, and only tries to determine the magnitude of the discount factor. This is not proper. Moreover, the way in which the "Time-Discount" is determined is not quite satisfactory. Following this, more practical explanations follow which are suited to facilitate the beginner's understanding of the processes involved in financial reality.

Next, the author addresses the subject of interest on money loans and treats it in the Böhm-Bawerkian spirit, in order to provide an elaborated and sound "Theory of Time-Value." The following chapter is also very useful: "Relatively Fixed and Relatively Increasable Forms of Capital." Less satisfactory is the treatment of the relationship between the interest rate and savings activity. Apart from the fact that only detailed statistical investigations

² Added by translator: (Fetter 2003, p. 63).

³ Added by translator: (Fetter 2003, ch. 15).

⁴ Added by translator: Schumpeter's original syntax truly resembles the style of Master Yoda here. It is as unusual in the original German as it would be in English today, although it might have been a stylistic device in Austria at the time. The original reads: "Es ist das vielleicht die anziehendste Darstellung dieses Themas, das klargestellt zu haben, einer der größten Fortschritte der modernen Theorie ist" (Schumpeter 1908, p. 417). Then again, it may simply be a mistake. In that case, the translation does justice to it. If not, it was worth a reference to Yoda.

could definitely solve this problem, it is already shown by everyday experience—and besides also the new theory—that savings cannot be considered a simple function of the interest rate and that deviations are merely due to secondary causes, as Fetter seems to suggest.

The second part is entitled “The Value of Human Services” and contains first of all a theory of wages and then a theory of enterprises and entrepreneurial profit. Most of what is presented here has little to do with the principle of value. Strictly speaking, this classification only fits to the few words on the pure theory of wages. The latter assumes that labor is an economic good, a starting point which is ever more generally considered to be useful, but does not lead very far.

The author covers the topic of “The Supply of Labour,” by which is meant the theory of population. He truly attempts to overcome the hidden complexity, which makes this area one of the darkest of political economy. But this attempt only shows how little can be said about the problem from our point of view, and to what extent the answers must lie with other sciences.

Fetter begins with biological facts, but of course, what he offers is neither complete nor does it guarantee scientific reliability. Besides that, already the first lines [of this discussion] contain a number of unproven assertions, some of which surely must surprise us, such as that humans have overcome the stage in which natural forces blindly determined their reproduction, and that in “earlier stages” one had merely sought to keep the population at a certain level, that war used to be the normal condition of the peoples, and many more, points about which the appointed expert in the field would surely shake his head in disbelief. We use this occasion to express our conviction that the omission of such territory would be one of the most urgently needed reforms in the system of economics.

The following chapters, like the one called “The Law of Wages” or the one on “The Relation of Labour to Value,” are of economic nature. The latter is very close to Böhm-Bawerk’s thought and goes to show that this theory is increasingly gaining recognition.

A correct and calm outline of the rather accepted modern views on the iron law of wages and the wages fund doctrine closes the theoretical part of this “Division,” the rest of which deals with aspects

that are usually explained in reference to the theory of wages, albeit there actually is no deeper connection, for example, wage systems, the progress of the working classes, trade-unionism etc.

The second "Division" of this part is entitled "Enterprise and Profit," where the latter term refers to entrepreneurial profit in the narrower sense. Again, we wish to direct the reader's attention to the original systematization of the book, which it would possibly be worthwhile to imitate. The theory of distribution would accordingly not form a separate topic, the claim to which it has lost as soon as one realizes that incomes are merely instances of price and value phenomena, at least in so far as their sheer economic nature is under consideration. We see such an approach here: interest and rent fall under "The Value of Material Things," so that in this section there only remains to be explained the value of human efforts, which for several reasons the author wishes not to conflate with material goods. For this classification to be complete, all the incomes, except the two mentioned, must thus be explained as the results of human labor. Therein lies not only an economic but also a very important social theory, which we cannot further explain here. The most important purely economic implication of this view is that entrepreneurial profit is based on labor, that is, more precisely the entrepreneurial profit in the narrower sense, which, as is well-known, has to be separated from the entrepreneur's salary.⁵ Fetter mentions a number of qualifications that are necessary to perform this particular kind of labor and seems to explain the extent of entrepreneurial profit exclusively from their scarcity.

This implies that entrepreneurial profit must be as much a regular phenomenon as wages, interest and rent, and that its tendency to disappear, ascribed to it by pure theory, does not exist.

It seems to us that this theory, which has already often been advocated, is not tenable for the following reason: if one is to explain an income from the value and the price of an effort, it is necessary that supply and demand enter into a price battle on the market with mutual over- and underbidding to set a price to which the theoretical exchange scheme fits. The latter becomes

⁵ Added by translator: Schumpeter uses the term "Unternehmerlohn" (Schumpeter 1908, p. 419), which seems to be translated best as "entrepreneur's salary" or "employer's salary."

useless, however, as soon as the process is different, which is the case here. One must not confuse a general ethical judgment of the entrepreneurial function in the social production process with those individual valuations that determine price formation. The entrepreneur does not appear on the market in order to sell at a fixed rate his entrepreneurial effort to the workers, capitalists, landowners or the consumers, or to society as such.

The lack of the latter is precisely the characteristic element. The imagined buyer of entrepreneurial effort, whoever it may be, is not even capable of forming an opinion about the price that he pays, and so he is incapable of comparing it with the utility he expects from the entrepreneurial effort. The entrepreneur appears on the market not to sell his effort, but to sell goods. Moreover, he buys production goods and pays their owners, so that he stands on the opposite side of the workers, capitalists, and landowners. The principle of value thus breaks down when it comes to the income of the entrepreneur. In addition, the latter is not nearly as steady a phenomenon as the other sources of income. One tends to express this fact quite often in contrasting entrepreneurial profit as a "dynamic" source of income with the three "static" ones.

In fact, the distinction between static and dynamic is meanwhile generally accepted and represents in my eyes one of the major advances in new economic theories. We have sorely missed this distinction in Professor Fetter's system.

Thereafter, the author discusses the phenomenon of monopoly. In doing so, the whole exact monopoly theory, one of the best in pure economics and surely not without some practical relevance for that matter, is omitted. After some brief remarks of very general nature, Professor Fetter proceeds directly to the discussion of organization and especially the problem of trusts. What he says about this is certainly very useful. The data provided are also very instructive for the beginner. Short remarks on speculation and crises close this part.

The third part is very rich in content and very well suited as an introduction to economic policy, especially for the American student.

Another aspect has to be mentioned, namely, the appendix of questions and critical notes, which seems to be a very practical didactic device. Indeed, the American method of education is very

different, and one can hardly compare American or English classes with our seminars. Nonetheless, such a collection of questions seems to be very appropriate for our study programs too.

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SUBJECTIVITY, ARBITRARINESS, AUSTRIAN VALUE THEORY, AND A REPLY TO LEITHNER

DAVID J. RAPP, MICHAEL OLBRICH, AND CHRISTOPH VENITZ

ABSTRACT: Contrary to the Austrian community's former perception, we revealed value investing's incompatibility with Austrian economics (Rapp, Olbrich, and Venitz, 2017). However, Leithner (2017) disagrees with this conclusion. He primarily argues that an analysis of value concepts should be neglected in favor of a discussion of the methods value investors apply to "measure" value to diagnose whether or not they adhere to Austrian value theory. Moreover, he claims that value investors use terms imprecisely and that *intrinsic value* is actually meant to be subjective, even conceptually. However, we believe Leithner's remarks suffer from fundamental misunderstandings and error. He is mistaken on Austrian value theory, subjectivity, and the conceptual foundations of value investing. Therefore, we gladly accept the offer to address his misapprehensions and to sharpen the Austrian understanding on investment decisions in general.

KEYWORDS: Value investing, Austrian economics, value theory, intrinsic value, subjectivism, arbitrariness

JEL CLASSIFICATION: B31, B53, D46, D52, G11, G32

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I. CONCEPTUALIZATION AND (IM)MEASURABILITY OF VALUE

In a paper previously published in this journal (Rapp, Olbrich, and Venitz, 2017) we debunked the myth of an alleged compatibility between value investing and Austrian economics. Unsurprisingly, one of the advocates of that myth, namely Leithner (2017), disagrees with our conclusion. Apart from both untenable allegations¹ and demonstrably incorrect claims,² his critique can be cut down to the following main argument: Leithner (2017, p. 172) rejects the emphasis we put on the fundamental conceptualization of value while favoring an analysis of “the concrete method by which the investor *measures* a given security’s value” to conclude whether or not he adheres to the subjective theory of value. Moreover, Leithner (2017, p. 175) alleges that value investors use terms, in particular the crucial term *intrinsic value*, “sloppily” but that what they “label ‘intrinsic value’ is, both conceptually and empirically, actually subjective.” Alas, Leithner’s remarks suffer from fundamental misunderstandings of and even some unfamiliarity with Austrian value theory, subjectivity, and value investing’s conceptual foundations. Therefore, we gladly embrace the opportunity to discuss Leithner’s critique in this reply to shed some light on the issue. By so doing, we seek to sharpen the understanding of both Austrian value theory and subjectivity in the context of investments, not least among the Austrian-friendly community of practitioners.

Leithner (2017, p. 172) criticizes us for solely discussing and

¹Specifically, Leithner (2017, pp. 173–174) accuses us of overlooking important personalities and their work, one of whom is suggested to be John Burr Williams. However, we did not overlook anyone; our list of references is rather extensive. The reason for not citing Williams, for example, in our original paper is quite simple. We addressed the question of conceptualization of value rather than methods of investment appraisal. Williams did not contribute anything new to the former and, hence, his work is of no importance to our initial discussion.

²For instance, Leithner (2017, p. 174) falls for the misconception that “John Burr Williams [...] wrote the first treatise that systematically applied the insights of the marginal revolution to the conceptualisation and measurement of securities’ values.” However, Williams’s (1938) treatise is neither the *first* of its kind nor is it—compared to its predecessors—*systematic*. For an earlier and more systematic treatise of the application of marginal utility to investment appraisal see, in particular, Liebermann (1923).

contrasting value *concepts* rather than dealing with the technical application of methods with which “the investor *measures* [...] value.” He incorrectly believes that “if they did then they would undermine their key contention” (p. 172). However, the *actual* reason why we purposely focus on the conceptualization of value at the expense of what Leithner (2017, p. 172) refers to as “measurement” of value is twofold. First, Austrian economists not only pointed out that value is necessarily subjective; they also revealed that subjective value is inevitably *immeasurable*. For instance, Mises (1953, p. 38) unambiguously explains:

So long as the subjective theory of value is accepted, this question of measurement cannot arise. In the older political economy, the search for a principle governing the measurement of value was to a certain extent justifiable. If, in accordance with an objective theory of value, the possibility of an objective concept of commodity-values is accepted, and exchange is regarded as the reciprocal surrender of equivalent goods, then the conclusion necessarily follows that exchange transactions must be preceded by measurement of the quantity of value contained in each of the objects that are to be exchanged. And it is then an obvious step to regard money as the measure of value.

Therefore, if one accepts the Mengerian, subjective notion of value, one necessarily has to regard “[a]cts of valuation [...] [as] not susceptible of any kind of measurement” (Mises, 1953, p. 39) since there “is no [...] objective unit in the field of human valuation” (Rothbard, 2009, p. 19). Mises (2012, p. 9) notes: “Marginal utility does not posit any unit of value” and, thus, “the notion of a measurement of value is vain” (Mises, 1998, p. 205). The very fact that Leithner claims value investors (including himself) can and do *measure* value reveals both fundamental ignorance of one of the most basic cornerstones of Austrian value theory and sympathy for objective concepts of value due to their characteristic of being amenable to measurement.

Second, the underlying conceptualization can never be side-stepped in a serious and informed discussion about value. The question of whether or not particular methods of investment appraisal³ (which Leithner perhaps has in mind when erroneously

³Herbener and Rapp (2016) not only present an Austrian approach to investment appraisal but also relate it to Austrian value theory.

discussing the “measurement” of value) serve their purposes, for instance, is inseparably linked to the concept of value (Schmalenbach, 1926, p. 297; Schmalenbach, 1956, p. 138; Matschke and Brösel, 2013, pp. 49–50). If the calculation is supposed to follow a hypothetical objective value concept, for example, for fiscal matters, methods resulting in highly subjective numbers are inadequate. In contrast, if the appraisal aims to provide a presumptive investor with his highly individual barely acceptable price, methods seeking to assess, for example, an objective “market value”—as attempted by prevalent contemporary DCF models springing from neoclassical finance theory—obviously fail (Matschke, Brösel, and Matschke, 2010, p. 35; Brösel, Matschke, and Olbrich, 2012, pp. 241–242; Matschke and Brösel, 2013, p. 50; Hering, 2014, p. 297; Herbener and Rapp, 2016, p. 22). In any case, analyzing methods of investment appraisal independently of the underlying value concept is pointless. Alas, Leithner (2017) overlooks the fact that methods of investment appraisal can only be judged in light of the underlying value concept, and mistakenly suggests instead that analyzing the process of “measuring” value alone allows for a conclusion regarding the underlying nature of value. Yet following Mises’s above-mentioned quote, the only thing the attempt to “measure” value reveals is the inconsistency with subjective value theory. Generally, the relevant object of analysis in contrasting Austrian theory with value investing’s foundations, however, is to be found in the underlying conceptualization of value only.

II. OBJECTIVE VALUE AND “SUBJECTIVITY”

According to the concept of value investing, a firm’s (or rather a share’s) *intrinsic value* and its market price should equate to one another *theoretically*; however, primarily investors’ emotionally driven behavior (mistakenly termed “irrational”) is seen to cause temporary deviations—either “overvaluations”, that is, the market price exceeds intrinsic value, or “undervaluations”, that is, intrinsic value exceeds the market price.⁴ Whenever such temporary periods

⁴ Bildersee, Cheh, and Zutshi (1993, p. 198)—empirically studying Graham’s net current asset value approach—note: “They [fundamental analysts] believe that stock prices sometimes deviate from ‘fundamental value’; the *true* underlying value that the security *should have* in the market, if *properly valued*” (italics added).

of investors' seemingly "irrational" actions come to an end, the market price is believed to approximate the share's intrinsic value because of the "inherent tendency for these disparities to correct themselves" (Graham and Dodd, 2009, pp. 69–70). Value investors try to make a profit from this alleged relation by investing in temporarily "undervalued" companies whose share prices are supposed to rise.⁵ In sum, while market prices can and do deviate from intrinsic value, they are believed to consistently tend toward intrinsic value which is, therefore, deemed to be the *fundamental yardstick* of price trends. Value investing's conceptualization of value is hence purposely objective.⁶ If intrinsic value was meant to be subjective—despite the term's apparent meaning—by contrast, the market price would either have to oscillate around thousands of "intrinsic" values resulting from different market participants' subjective appraisals of one and the same share at once, which is evidently impossible; or alternatively, the market price would have to oscillate around one particular subjectively appraised "intrinsic" value. However, *which* of the thousands and thousands of subjective appraisals for the very same share would then cause the market price to oscillate? *Why* should one particular subjectively appraised "intrinsic" value cause the market price, which can be the outcome of thousands and thousands of independent valuations, to oscillate? Hence, if intrinsic value were indeed a subjective concept, the very idea of value investing would go up in smoke. Leithner (2017, p. 175) seems to not even get these conceptual foundations of value investing right and, hence, is demonstrably in error when he alleges that what value investors "label 'intrinsic value' is [...] conceptually [...] actually subjective"—nothing could be further from the truth.

One thing Leithner (2017, pp. 175–176) correctly realizes, though, while referring to both John Burr Williams and Warren Buffett, is the fact that different value investors will arrive at different figures when trying to appraise a particular share's intrinsic value.

⁵ Value investor Vick (1999, p. 8) asserts "that undervalued situations, by definition, must end sometime."

⁶ Vick (1999, p. 4) emphasizes that "the notion of intrinsic value is *not subjective* but generic [...] In the absolute sense, intrinsic value is the *real worth* of a company, the sale price investors could reasonably place on the company if they all possessed the same information and insight" (*italics added*).

However, he misdiagnoses this fact as the result of the appraisal's subjectivity and, hence, is barking up the wrong tree again. Value investing requires the assessment of a certain share's intrinsic, that is, its one and only "true value" (Graham and Dodd, 2009, p. 69). Yet intrinsic value is nothing but a mere *phantom*.⁷ The fact that such a phantom cannot be properly grasped by nature, however, does not at all allow for the conclusion that the concept of intrinsic value was actually subjective. Rather than subjectivity, intrinsic value's non-existence causes differing appraisals among value investors. How could it be possible for independent investors to assess a particular figure equally if that figure does not even exist, and, hence, is incalculable? Apparently, the appraisal of intrinsic value is *not* subjective in the sense that it considers a particular individual's actual (financial) ends and means guiding his actions; because intrinsic value does not exist and, hence, value investors stumble about in the dark when trying to appraise it, instead, it is nothing but entirely *arbitrary*.

The essential fallacy inherent in Leithner's reasoning can be illustrated by analogy with the cost/labor theory of value as similarly applied by both classical economists and Marxists (Mises, 1998, pp. 204–205). While they undoubtedly "shared the desire to objectify value" (Cole, 2010, p. 216), different appraisals will result in differing figures too. For example, if a particular product requires certain input factors on a large scale (such as screws) that were obtained over a period of time at various costs, one has to pragmatically assess an average cost which will—due to plenty of possible ways to make the calculation—result in differing numbers. The same applies to both the allocation of overhead costs and the selection of the method of depreciation employed for the involved manufacturing tools. Not least, time spent to manufacture the product can be calculated to the split second or one might consider only full hours, for instance. However, does that space necessarily resulting in differing figures lead to the conclusion that the Marxist theory of value is conceptually actually subjective and, therefore, resembles the Austrian perception? While Leithner's reasoning strongly suggests this conclusion, thus revising the history of

⁷ As Mises (1998, p. 96) puts it: "Value is not intrinsic, it is not in things." Value investing's perception of value, therefore, must be characterized as "the naive concept of the layman" (Ritenour, 2016, p. 192).

economic thought, it is evidently fallacious. Both Marxism and value investing purposely apply objective perceptions of value; yet the attempts to appraise such value are, owing to its absence, solely characterized by *arbitrariness*.

III. SUBJECTIVE VALUE AND SUBJECTIVITY

Contrary to the conceptual foundations of value investing, Austrian analysis holds that it “is ultimately always the subjective value judgments of individuals that determine the formation of prices” (Mises, 1998, p. 329). Menger (2007, p. 120) emphasizes that the “value of goods arises from their relationship to our needs, and is not inherent in the goods themselves.” Intrinsic value is, hence, considered an erroneous belief (Ritenour, 2016, p. 192). Rather than a company’s one and only “true, intrinsic, or ultimate worth” (Greenwald et al., 2001, p. 26) fundamentally determining price trends, Austrians have pointed to the fact that it is indeed the *inequality* of values causing exchanges and, thus, prices (Mises, 1998, pp. 328–329). In valuing two alternative courses of action, such as buying or abstaining from buying a particular share, an investor compares the benefits associated with both alternatives and ultimately ranks them in light of his ends (Mises, 1998, p. 94). A financial investment decision, then, requires knowledge of the *marginal price* the investor can just barely accept without suffering an economic loss as prerequisite for a nonarbitrary valuation (Herbener and Rapp, 2016, pp. 10–11). Such marginal price is not an objective indicator, and is even less reflected in intrinsic value; instead it will differ both from individual to individual and as time passes, because it is determined by a particular person’s alterable (financial) ends and means (Hering, Toll, and Kirilova, 2015, p. 24; Olbrich, Quill, and Rapp, 2015, p. 20; Rapp, Olbrich, and Venitz, 2017, p. 16). Hence, a genuine investment appraisal aiming to arm an investor with his barely acceptable price needs to take that individuality into account. Time preference makes it necessary to place a discount on future satisfaction (Herbener, 2011, p. 14; Herbener, 2018). Consequently, investment appraisal must discount an investment’s expected future benefits, that is, it must rely on the present value technique. The subjective nature of value and, hence, of a genuine investment appraisal is, then, reflected in a threefold manner (Herbener and Rapp, 2016,

pp. 16–18, 19–20). *First*, the projection of future earnings is inevitably subjective due to both the necessity to form expectations given uncertainty and individually differing financial circumstances, particularly tax rates, tax loss carry-forwards, and the potential capability to control corporate policy as well as to gain from synergies if, for instance, an investor already owns one of the target firm's competitors. *Second*, the only correct discount rate on imperfect—that is, real—capital markets equals the internal rate of return of a particular investor's best alternative application of funds, either another investment or the settlement of a loan (fundamentally Schmalenbach, 1908/1909; Hering, 2014, p. 29). Since an individual's best investment or funding alternative is determined by both that person's financial ends reflecting his time preference and the overall pool of investment and funding projects available to him, it will necessarily differ from individual to individual. *Third*, uncertainty is an obstacle to optimal problem-solving; investors can only rely on heuristics. Contrary to the popular but fundamentally flawed risk premium concept (Hering, 2017, pp. 292–310; Hülsmann, 2018), one promising approach to structure uncertainty's effects associated with an investment lies in the application of a Monte Carlo simulation (Hertz, 1964, pp. 95–97; Coenenberg, 1970, pp. 793–795). Both the forecast of future earnings and discount rates as well as the selection of the final marginal price out of the distribution provided by the simulation, then, are subject to highly individual entrepreneurial judgments.

Leithner's (2017, pp. 172–173) summary of methods he and his fellow value investors apply to "measure" value, therefore, exposes nothing but the methods' fundamental uselessness. Appraising "a company according to the external prices of its assets" (p. 173) is in fact flawed in three respects (Olbrich, 2000, p. 454; Rapp, 2014, p. 1067).⁸ *First*, it entirely disregards a particular investor's subjective ends and means, such as his planning horizon or alternative available financial opportunities. *Second*, it neglects the significance of both a future-orientation and combination effects as it exclusively considers the sum of past or present prices of individually appraised assets rather than the future earning power of the company as a whole. *Third*, it conflates two inevitably

⁸ Schmalenbach (1917/1918, p. 6) already uncovers such a procedure as a bad blunder.

distinguishable things, namely values and prices. Leithner (2017, p. 173) also errs when he alternatively suggests using “some rate” to discount (undefined) “cash flows [...] to the present” in a DCF appraisal. As outlined above, there is only one correct discount rate for genuine subjective appraisals; nor is it proper to apply “some rate”, and nor does the discount rate reflect an “opinion” investors “believe in” as claimed by Williams (1938, pp. 16–17) whom Leithner (2017, pp. 174–175) invokes prominently. It instead stems from a sound causal chain deduced from the concept of marginal utility by advocates of investment theory developed in the German-speaking world whose lineage is *consistently* traceable to early Austrian economics (Schmalenbach, 1919, p. 334; Schmalenbach, 1937, p. 27; Matschke and Brösel, 2013, p. 6, fn. 11; Hering, 2014, pp. 27–28; Olbrich, Quill, and Rapp, 2015, pp. 15–16; Herbener and Rapp, 2016, pp. 12–13). Hence, while Leithner (2017, p. 175) seems to acknowledge the Austrian perspective when he explicates that value stems from “the importance an acting individual places upon the good (security) for the achievement of his desired ends,” he clearly is grievously mistaken on the methods he considers proper in preparing investment decisions from an Austrian perspective.

Needless to say, in conclusion, value investing remains fundamentally at odds with the Austrian school.

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A BCT IS NOT ABCT: A REJOINDER TO BRIAN SIMPSON

SHAWN RITENOUR

Brian Simpson (2017) in responding to my lengthy review of his two volume *Money, Banking, and the Business Cycle*, provides a welcome opportunity to identify the main distinctions between Simpson's business cycle theory and Austrian business cycle theory (ABCT). Simpson's earnest pleas to the contrary, I nevertheless remain unmoved that he advances our understanding of ABCT. In his response, Simpson asserts I made several errors in my initial review. In this response to Simpson, I will narrow the focus by only discussing our differences about the nature of the business cycle, as this is what I understand to be of most fundamental importance.

When attempting to explicate a theory of the business cycle, it is important to identify and distinguish between those components that are necessary features of the cycle and those that are merely incidental. As is well documented in the economic literature, the key necessary factor of the business cycle is malinvestment in the intertemporal production structure. It is important to remember that the business cycle is a *cycle*. ABCT explains that recessions are endogenous market responses to booms generated by exogenous

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monetary inflation (Garrison, 1989, pp. 6–7). The important question to ask is what precisely causes the cluster of entrepreneurial error that results in the bust. After all *something* has to get the cyclical ball rolling.

To identify what this something is, Ludwig von Mises (2006a [1928]) developed what became known as Austrian Business Cycle Theory by bringing together and integrating three lines of economic thought. He incorporated Knut Wicksell's concept of the natural interest rate, Eugen von Böhm-Bawerk's capital theory in which he describes the intertemporal capital structure, and the Currency School theory of the effects of credit expansion via the issuance of fiduciary bank notes. Mises rightly extended the Currency School theory to include demand deposits which serve the same economic function as bank notes.

Mises (1954 [1912], 357–366; 1998 [1949], 535–583) explained that, in our modern monetary economy, bank credit expansion not funded by voluntary savings leads to capital malinvestment resulting in a boom/bust business cycle. Indeed, ABCT as it has been developed by numerous economists understand the cause of the malinvestment that triggers the business cycle to be due to artificially low interest rates (Garrison, 1989; 2001, pp. 69–71; Haberler, 1983 [1932], pp. 14–15; Hayek, 1967 [1935], pp. 54–65, 85–91; 2008 [1933], pp. 60–62, 67–68, 73–75; Huerta de Soto, 2006, pp. 348–360; Macovei, 2015, pp. 416–418; Mises, 1954 [1912], pp. 357–364; 1983, pp. 2–3; 2006a [1928], pp. 109–111; 2006b [1931], pp. 160–163; Rothbard, 1983 [1969], pp. 29–30; 2000, pp. 9–14; 2004 [1962], pp. 996–1004; Salerno, 2012, pp. 15–24; Sieroñ, 2016, p. 313; Strigl, 2000 [1934], pp. 111–116). Simpson (2014, vol. I, p. 74) himself recognizes this. The interest rate's essential role in the business cycle is nicely summed up by David Howden (2016, pp. 345–346) who recently notes, "the assertion that artificial reductions to the interest rate cause an unsustainable lengthening in the structure of production is the central tenet of the Austrian theory of the business cycle."

Lending institutions create fiduciary money through credit expansion. Such credit expansion entails lower money interest rates because in order for banks to find willing borrowers, they must make them an offer they cannot refuse. Banks lower the loanable funds rate so there will be people willing to borrow the money the banks are eager to create.

This artificial lowering of the interest rate is the catalyst for the business cycle, because it generates an inflationary boom. Entrepreneurial ambitions expand immediately which increases economic activity. New businesses are started with the necessary capital funds that can be obtained by lower priced credit. In any given economic situation, opportunities for production that can actually be carried out are limited by the supply of capital goods. With credit expansion in the form of fiduciary money, new investment projects appear profitable because the interest rate for loans is now below the natural rate established by market. Note that this assessment by entrepreneurs does not hinge on increased revenues resulting from increased spending. It is the result of decreases in the costs of borrowing due to the artificially lower interest rates. Additionally, because the present value of capital goods is the sum of their future marginal revenue products discounted by the interest rate, a decrease in the monetary rate of interest causes an increase in the prices of capital goods, which in turn results in capital gains before any rise in sales. The lower interest rates, therefore, serve as the incentive for malinvestment *before* a firm's revenues increase by even one dollar.

Businesses use the new money they borrow to bid away factors from other uses. Additional monetary units do not spontaneously create an increase in factors of production, so the stock of producer goods will be stable relative to the increased demand. Consequently, the prices of factors of production will increase.

The first prices to rise are those of raw materials, semi-manufactured goods, other higher order goods, and wage rates. Entrepreneurs will begin attempting to lengthen the structure of production. The prices of producer goods at stages farthest away from consumption increases. Resources begin to be shifted away from lower order uses to higher order uses. As these adjustments take place, the price differentials between products and their factors of production decrease all along the production structure.

This process is reversed as recipients of the new money spend it. The owners of original factors who receive increased money income allocate it according to their prevailing time preferences. Their spending will follow their same consumption/investment ratio. Production, therefore, no longer reflects voluntary time preferences. Businesses have been led to invest in higher stages

of production as if more real savings were available, when in fact they are not. Businesses have overinvested in higher stages of production and underinvested in lower stages of production. ABCT sees the cluster of entrepreneurial error to be constituted in malinvestment, not overinvestment.

As the spending of the new money ripples through the economy, the price differentials between products and their factors of production will be reestablished at their previous larger spread. Prices of lower order goods will increase relative to those of higher order goods. Interest rates will increase to their previous levels. The monetary loan rate will follow the rate established in the production structure. It is even likely that the loan rate will spike up as businesses increase their demand for loans in the hope of saving their enterprises.

At this point, the crisis is revealed, and it becomes apparent that the expansion of business projects cannot all be brought to profitable completion. The new investment at higher stages will have to be liquidated or abandoned. Many new factories remain uncompleted. Other operations already completed shut down. Some still operate because, after writing off losses, they still generate some positive income. Entrepreneurial malinvestment induced by artificially low interest rates facilitating the expansion of credit in the form of fiduciary money sows the seeds of its own destruction. The process culminates in economic recession. Such are the basic outlines of ABCT.

We are now able to cast Simpson's theory in bold relief. Simpson (2014, vol. I, pp. 57–62) does agree with ABCT by citing an increase in the money supply as the cause of the cycle. He also recognizes that such inflation is accompanied by a decrease in interest rates, attributing this to the necessary consequence of central bank open market operations (Simpson 2014, vol. I, pp. 29–32). While alluding to the effects of increased reserves on the loanable funds market, Simpson does not explain the precise role commercial banks have in the process of lowering interest rates.

While Simpson does acknowledge the effect inflation has on market loanable funds interest rates, he argues that the primary cause of the business cycle is faster than expected monetary inflation that results in faster than anticipated increases in spending,

revenues, and return on investment (which he calls profit), because revenues are calculated based on current sales while costs are calculated based on past expenditure on durable capital goods (Simpson, 2014, vol. I, pp. 59–76). He does acknowledge that the artificially low interest rates also encourage increased investment because it lowers the cost of borrowing resulting in malinvestment (Simpson 2014, vol. I, pp. 73–74, 76–78, 80). Simpson (2014, vol. I, p. 74) stresses, however, that

While the effect of interest rates is important, much more emphasis needs to be placed on the rate of profit. This is the more important variable. The rate of profit is the primary reason why businessmen and entrepreneurs invest. The interest rate is secondary....

Finally, Simpson argues that, just as faster than expected monetary inflation causes the boom, when the central bank begins to decrease the money supply or merely increase it at a rate lower than anticipated, the economy will contract.

We are now at the point to provide some comparisons between Simpson's theory of the business cycle and ABCT. In the first place, ABCT sees the problem *primarily* as one of malinvestment, that is, investment in the wrong stages of production. Simpson barely touches on this and relegates it to decidedly secondary status. However, it is at the heart of ABCT.

Caused by artificially low monetary interest rates, malinvestment is *not* dependent on changes in inflationary expectations. The artificially lower interest rates make investment in some projects more attractive even if expectations about future revenues and rate of return on investment remain constant. This is precisely why, contrary to Simpson (2017, p. 261), the *economic* definition of profit is important. Interest is a cost of production. If borrowing costs decrease, projects appear more profitable even if the return on investment remains the same. Entrepreneurs, therefore, have the incentive to begin new or expand existing production projects even before the effects of increased overall spending are manifest throughout the economy.

In ABCT any effects of increased spending on entrepreneurs' return on investment due to calculating costs based on historical spending on durable capital goods are, in fact, of secondary

importance in explaining the malinvestment that is the key to the business cycle. Austrians who have contributed to the development of ABCT do recognize that these effects can occur (Mises, 1998 [1949], pp. 546–547; Huerta de Soto, 2006, pp. 365–366). Such effects, however, are decidedly secondary in terms of importance, logic, and chronology. They can prolong the boom and therefore contribute to its magnitude. They are not, however, the cause of the cycle. The malinvestment that is the source of the boom/bust cycle is triggered by artificially low interest rates and the lending of new fiduciary money that is borrowed and invested *before* any change in macroeconomic expectations.

Additionally, wages and land rents will begin to rise sooner than later, because entrepreneurs who get the new money first must bid factors away from their alternative uses. This necessitates offering higher prices for their services. Production costs also would, therefore, increase sooner rather than later.

I continue to maintain that, as I said in my original review, Simpson's theory seems more akin to New Classical Money Surprise Theory (Ritenour, 2016, p. 386). According to Simpson, the cause of the cycle is a large, unanticipated increase in money supply by the central bank. Such inflation results in increases in spending, prices, and revenues. Higher revenues increase firm rates of return on investment, thereby providing incentives for firms to expand output. The downturn only occurs when the rate of inflation slows, thereby decreasing rates of return below what is expected. Malinvestment in the capital structure is an afterthought at best.

In Simpson's response to my initial review, he rightly exhorts the reader not to reject a theory merely because it is different (Simpson, 2017, 264). No exposition of a theory is correct either merely because it is old and well received or because it is new and previously unknown. An economic theory is correct to the extent that it can explain the issue at hand. Austrian business cycle was developed to explain the nature of the boom/bust cycle in the economy. This theory explains that the business cycle is the result of malinvestment within the intertemporal production structure fostered by monetary interest rates pushed artificially low by credit expansion, not funded voluntary spending. Because Simpson identifies larger than expected return on investment due to large unexpected rates of monetary inflation as the cause of the

cycle, his theory misconstrues ABCT's explanation of the cause of the cycle. I continue to maintain that Simpson may have a business cycle theory, but his is not Austrian business cycle theory.

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BOOK REVIEW

HOW ECONOMICS PROFESSORS CAN STOP FAILING US

STEVEN PAYSON

LANHAM, MD: LEXINGTON BOOKS, 2017, XIII + 372 PP.

SAMUEL BOSTAPH

Steven Payson, the author of this provocatively titled book, is a former career federal government economist who has the temerity to argue that economics could be a useful science if mainstream academic economist theoreticians would simply adopt and employ the scientific method in a serious effort to provide an understanding of the world in which we live. Instead, he convincingly argues, the culture of academic economists encourages and rewards a mathematical modeling onanism that is not only not “seminal,” but is instead practically barren of any contributions to that understanding. Payson argues that the main purpose of such model-building exercises is to achieve publication in what are believed to

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be the top economics journals and, consequently, to garner citations in the published work of other academic economists.

Because the book is almost totally critical and contains suggestions for improvement only in the concluding chapter, I think a more appropriate title for it might be “Why Mainstream Economics Professors Are Not Contributing to Useful Knowledge, and a Few Suggestions for Improvement.” There is much anger and outrage expressed by the author in the course of his argument, and yet the book is not just a polemic. If Payson’s critique is on the mark, the question of what to do is certainly an important one. Economic policy makers face a host of real world problems and need guidance in the face of them. What they get instead in some important instances is uncomprehending surprise followed by excuses and panic—a prime example being the mainstream economics profession’s response to the financial meltdown now termed “The Great Recession.” The result of that Federal Reserve-fueled debacle was the most simple-minded Keynesian money dump in decades, and with no end in sight at this writing.

The cover of the book features a chessboard showing a simple “fool’s mate.” This seems appropriate as it is Payson’s main contention that mainstream model-building founders quickly when it is realized that most of this activity consists of making a few simple assumptions and then engaging in a rigorous mathematical exercise to “rediscover” them. Other equally defensible assumptions would produce different implications. Little effort is devoted to the rigorous derivation and defense of assumptions, or to assessing the reliability of the data on which they may be based.¹ Milton Friedman argued that it was predictability of a model that mattered, not realism in assumptions which need only be “sufficiently good approximations for the purpose at hand.” (p. 64) Too many economists took this to mean that only predictability mattered. Such an approach stands in stark contrast to that of the natural science practice of using the scientific method to achieve an understanding of the objective physical world that contributes

¹ Truman Capote is said to have once remarked that some people are writers and others are typists. Those who have little regard for the reliability of the data they use or the reality of the assumptions on which they rely may be regarded as falling into the latter category.

to useful knowledge—that is, an “understanding of how the real world works.” (p. 53) Payson’s purpose is to counter the academic economist mainstream by pointing out that its mathematical clothing does not cover its explanatory vacuity.

By the natural science approach, Payson means the application of methods intended to reveal “the causality behind known and observable physical phenomena.” (p. 120) Natural scientists do use mathematical models to develop their understanding of causal relations; however, the mathematics is simply a tool in this quest, not a substitute for results. In natural science culture, methodological issues are key in research designed to achieve an understanding of actual phenomena. In academic economic culture, methodology is a specialized subfield and economics students seldom address the question of the use of scientific method in research. (p. 188)

Instead, graduate students in mainstream economics programs study complicated mathematical models constructed on the basis of a few restrictive assumptions, and learn to model-build themselves with a view to future publication in economics journals. The question of the accuracy of the assumptions with respect to ordinary human action is less important than the question of how to rack up as many publications as possible in journals believed to be top ranked among all those published. The end goal is to garner citations by other economists in their own publications, rather than to advance an understanding of human action that has useful policy applications or provides an advance in knowledge of praxeological processes. [My term, not Payson’s] In support of this claim, Payson references the Presidential Lecture by David Card to the 2016 Annual Meeting of the Western Economic Association International. In it, Card advised members of his audience to write papers intended to receive a multitude of citations if they desired publication in top-ranked journals. (pp. 111–113) That same year, at the annual conference of the Southern Economics Association, keynote speaker Andrei Schleifer was introduced as the most cited economist in the world, as if this was his key accomplishment. (p. 178) In addition, Payson adds, it is considered desirable to learn to do this research under professors who are leading lights of the profession in terms of their own citation counts in “top ranked” journals.

Payson both generalizes this activity as characteristic of mainstream academic research, as well as provides specific examples

of conference presentations and published research that fit the stereotype. So far as the purpose of this activity is concerned, students and newly-minted doctorates are evaluated for employability, tenure, promotion, and career advancement based on how well they play the game. The result is an academic culture that encourages and sustains the subordination of research ends to means. The mathematical tail wags the research dog. Payson terms this "literature-only discourse," and its result is "unscientific economic theory." Its hallmarks are assumptions that, if slightly altered, would yield different results for the model, a methodology that is "understood, valued, and genuinely studied by a very small group of other economists with advanced expertise in that highly specific topic," and findings that possess no real world explanatory value. (pp. 51–52)

Although econometric testing might seem to corroborate such a paper's conclusions, there are many problems here, he argues. Simple-minded and inaccurate assumptions such as that there exist "constant elasticities of substitution among factor inputs," or that the characteristics possible for a variable's population are normally distributed, are all too prevalent. Association may be mistaken for causation, even in very complex multivariate analysis. Imprecise or arbitrary proxies are often used for variables in the model. "Data mining" is used to narrow down results to the plausible, and "statistical significance" is often mistaken for "importance." (pp. 58–63) As other researchers build on these models, a "theoretical literature" is accumulated that is mistakenly viewed as a growth in "knowledge."

Returning to the question of citation counts as a measure of scholarly achievement and a yardstick of professional ranking, Payson argues that there are a number of reasons for skepticism. For one, great discoveries in natural science are known and their authors acknowledged throughout the world. Not so for economists. Another problem concerns the ranking of what are considered to be the top economics journals. Depending on the weighting rules, the *American Economic Review* (AER) is either first or seventeenth, or maybe another ranking entirely.²

² As a young intelligence staff officer in the Office of the Deputy Chief of Staff for Intelligence at the headquarters of the United States Army, Europe, in the early

Another problem is the vulnerability of the system to be gamed. Researchers can solicit citations from colleagues, journals can solicit citations to particular scholars or to previous articles published in that journal, and scholars often cite their own work.³ In addition, there is no guarantee that a citation is particularly relevant to the article in which it is cited. It may be the author is just signaling that he is knowledgeable of previous scholarship on the subject, or is trying to show that his work is related to that of top-ranked scholars. The citation may even be a devastatingly critical one.

The bottom line on this is that citations have become a substitute for serious evaluation of the importance of publications. It simplifies decision-making in hiring, tenure, promotion, and professional ranking because evaluation for such decisions is difficult, highly personal, and those engaged in it may feel inadequate to the task. This is especially the case if the publication field is highly specialized and highly mathematical, even if the economic concepts at issue are relatively simple.

At one point, Payson makes a shocking admission: he believes that college and university economics professors should be performing research and preparing lectures directly relevant to their job of teaching and mentoring students. Instead, they have very strong incentives to starve that function by devoting so much time and effort to the publication game. (pp. 88–89) The current academic economist's culture is undercutting what should be the main purpose of the academy, in this view. Further consequences include reduced time to read what is published in one's field and a plethora of articles that are read by only a few specialists, few of them outside academia.

A number of ethical problems in the profession are briefly treated in the book. These include the failure of authors to clearly disclose when they may have conflicts of interest. The American

1970s, I was witness to a task force from Washington, D.C., whose job it was to rate our productivity. It finally was decided that numbers of pages in intelligence reports would do this. Particular tasks were to be rated by the time spent doing them. Yes, it was just that simple.

³ Years ago, I reviewed a collection of articles that included one by a future Nobel laureate. Thirty-three of the seventy-five articles that he cited (44%) in his bibliography were his own.

Economic Association (AEA) has a “disclosure policy” for articles in its journals, but it may be difficult to track down the disclosure statement, and the policy only suggests that it may be to the author’s interest to make such a disclosure if acceptance is to be assured. A serious problem for AEA journals is that since 2011, its journals switched from a “double blind” review process to a “single blind” process for submitted articles. The rationale was that search engines now make it too easy for referees to identify authors, if they so choose. So, the Executive Committee removed the blinders, thus sanctifying what was previously considered unethical behavior. (pp. 213–217) Couple this with the AER reserving the right to reject papers without review and the foundation for basic fairness and scientific integrity is significantly weakened.

One would think that if publication for citation of journal articles that essentially contribute very little, if anything, to an understanding of real world human action is what characterizes the research activity of most academic economists, it would be noticed and discussed. And, indeed, Payson cites several scholars, most notably Robert Solow, Deirdre McCloskey, and Paul Ormerod, who have been publicly critical of it. The problem is that the public discussion of this issue has led to nothing but more public discussion while few, if any, actions have been taken to change the culture.

Payson argues that a good first step would be for the profession to adopt a code of professional ethics that promotes scientific integrity and the objectivity, reproducibility, and transparency of research in economics. He notes the existence of the Berkeley Initiative for Transparency in the Social Sciences, but argues that essentially all that is being done is to discuss the questions of ethics and scientific integrity in economic research, while taking no actual actions to attempt to change existing practices for the better. Payson founded the Association for Integrity and Responsible Leadership in Economics in 2007 in an attempt to encourage economists, especially those in academia, to take actions to change existing practices that are ethically suspect. Despite many papers and training sessions on the subject of ethics in economics, at his book’s publication there was still no code of professional ethics for economists in the United States. This may change. At this writing the AEA, under the leadership of Alvin Roth, has sent to its members for comment a draft Code of Professional Conduct. It calls for

“intellectual and professional integrity” in research, objectivity, the disclosure of conflicts of interest, “civil and respectful dialogue,” and equal opportunity. It also assigns to economists the collective responsibility for “developing institutional arrangements and a professional environment that promote free expression concerning economics.” I suspect that just about anything that economists do that is not obviously a matter of simple wrongdoing, like lying or plagiarism, will survive this code. Notably absent is some statement to the effect that economists have some responsibility to the public for what they do.⁴

Payson would like a lot more than this to be done to change the culture of academic economics. For example, while he was a member of the board of the Society of Government Economists and organizing conference sessions, he initiated a requirement that paper proposals include a statement explaining “how the paper contributes to a better understanding of economics.” (p. 323) He was met with considerable pushback and the requirement was eliminated in two years. His conclusion: many economists “essentially have no justification, or defensible reason, for what they are doing” and resent being asked to provide one.

Payson desires an economic research culture that promotes work that has tangible social benefits. His suggestions for improvement are directed toward that end. First, stop the funding of research that consists of mathematical onanism. Those with power and authority in governmental and non-governmental grant-making institutions should stop funding such research. Second, senior faculty should take the lead in ending citation counts for the purpose of, hiring, tenure, and promotion decisions. Third, introduce required courses for economics degree-granting programs in “professional ethics, scientific integrity, and responsible leadership.” (p. 335) Finally, he argues that it is the responsibility of prominent economists to

⁴ So far (June 2018) there has been no adoption of any code of professional conduct by the AEA. Instead, a January 2018 Ad Hoc Committee on the Professional Climate in Economics was created to evaluate the proposals of the Ad Hoc Committee to Consider a Code of Professional Conduct ‘with a particular focus on the issues faced by women and minority groups.’ The result: the April 2018 creation of a New Standing Committee on Equity, Diversity, and Professional Conduct. It is charged with evaluating and implementing the recommendations of the Ad Hoc Committee on the Professional Climate in Economics.

take the lead in cleaning the stable. They don't hesitate to vocally address important issues outside the profession; they should do the same within it.

In assessing the main arguments in the book, there is a glaring flaw that most economists in the Austrian School tradition will immediately see. Payson acknowledges that there exists a serious discussion of the ontological, epistemological, and thus methodological differences between the natural science research program and that of economics. (p. 189) He chooses not to address it, while maintaining that it is still possible to direct mainstream economic research into the discovery of true causality. I suspect that the reason lies in his belief that Paul Samuelson, "one of the greatest economists who ever lived," and whose *Foundations of Economic Analysis* became the Bible of mainstream economics, "did much more good than harm." (p. 120) Well, if functionality is not causality, and there are no laws in economics that can be expressed as constant quantitative relations, what is the point of most of what mainstream economists do? How will they discover causal relations when their prime methodology is epistemologically unsuited to the task? His critique of mainstream academic economic culture and the preoccupation with mathematical onanism, rather than with seeking an understanding of the causal relations of human action, is compelling and timely. But a car is only as good as its engine and that of the economics that sprang from Samuelson has seized. Replacing the maps on the onboard GPS navigator will not improve the situation.

In closing, it is fair to ask if this book is likely to have any effect on the practices it critiques. I doubt it. Economists are well aware of the sunk cost fallacy; however, with respect to those who populate what are widely considered to be the upper ranks of the profession, a conversion to the goals that Payson advises would have serious consequences for them. It would mean that they would have to disavow most of their life's work and act to drastically transform academic economics. Don't hold your breath.

BOOK REVIEW

THE PROGRESSIVE ERA

MURRAY N. ROTHBARD

EDITED BY PATRICK NEWMAN

AUBURN, AL: MISES INSTITUTE, 2017, 600 PP.

CHRIS CALTON

I have heard people say that Murray Rothbard has been more productive after his death than many academics during their lives. His newest posthumously published book *The Progressive Era* certainly adds weight to this claim. Edited by Patrick Newman, and with a foreword by Judge Andrew Napolitano, this comprehensive history brings forgotten elements of the growth of the government-business partnership back to the forefront of the historical narrative, offers a detailed analysis of the transition to a state-centric party-system, and dismantles the legend of Teddy Roosevelt—and this is just from the previously unpublished chapters that make up the first half of the book! As with any of Rothbard's histories, *The Progressive Era* is packed with details

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that one cannot find elsewhere, and he pulls from his expertise as a professional economist to offer an interpretation that no other historian of the Progressive Era is able to provide.

The book is primarily divided between the unpublished chapters (1–9) and the republished journal articles (chapters 10–15). The first nine chapters of the book can be further divided into three sections: the first three chapters, covering the emergence of railroads and other monopolies, chapters 4 through 6, analyzing the changing voter patterns and the death of the third party-system, and chapters 7 through 9, covering Theodore Roosevelt, and the relationship between government, business, intellectuals, and unions. The previously published chapters take us through the significant social movements (chapter 10), the emergence of a welfare and warfare state (chapter 11 through 13), the Federal Reserve (chapter 14), and Herbert Hoover (chapter 15). The bulk of this review will focus on the unpublished chapters.

Historians typically date the Progressive Era from 1890—overlapping with the last decade of the Gilded Age—until 1920, but Rothbard contends that to truly understand the Progressive Era, we should start earlier. For those interested in the Gilded Age, *The Progressive Era* is a must-read, as Rothbard covers both periods in this work. He does this to highlight the central importance in the railroad industry in American progressivism.

The second half of the nineteenth century was certainly the era of big business in the United States, but no industry was as important—politically and economically—as railroads. Rothbard shows us how the government got involved in the railroad industry early on, first arguing for subsidies, which led to a backlash of “anti-monopoly” sentiment that would define much of the Gilded and Progressive ages. The railroad companies attempted to cartelize, and the government used this as justification for ever-increasing regulations, as well as the establishment of the Interstate Commerce Commission. These interventions established precedents that would come to affect every major industry.

After telling the story of the railroads, Rothbard turns to the other major industries that defined the era: oil, steel, mechanized agriculture, and sugar. Each of these industries would attempt monopoly, and although the market stymied the ambitions of

the industry leaders, the federal government was able justify its increasing involvement in the economy.

Among the most important contributions Rothbard makes in these chapters is to upset the competing narratives on the so-called “Robber Barons” found in histories by the anti-market historians, who often treat these figures as villains, and pro-market historians, who present these figures as heroic innovators. It is worth comparing Rothbard’s analysis to two more typical examples of histories on these figures. Sean Dennis Cashman, author of a standard history of the Gilded Age, uses John D. Rockefeller as an example of a “typical” monopolist (though Cashman refers to Standard Oil, at various times, as a “trust,” a “cartel,” and a “monopoly,” without ever making a distinction in terms). Cashman writes: “Rockefeller prevailed upon railroads in the 1870s to offer him rebates—lower fares—for oil shipped at bulk over long distance. While this was justifiable in purely economic terms... it was unfair to smaller, independent oil producers.” (1993, p. 47) In this typical (and value-laden) representation of Rockefeller, the tycoon was both a nefarious, self-serving businessman and a *successful* predatory monopolist. By contrast, Burton Fulsom, Jr. offers a kinder interpretation of Rockefeller, writing that “[b]igness was not Rockefeller’s real goal. It was just a means of cutting costs” and “Rockefeller never wanted to oust all of his rivals.” (1991, p. 89) Rockefeller was thus a benevolent businessman who *wanted* competition and was working for the poor.

Rothbard takes neither approach in his narrative. He concedes Cashman’s narrative about Rockefeller and other industry leaders in their desire “to seek monopoly... restrict production and raise prices.” (p. 93) Rockefeller did try “to achieve [railroad rebates] by buying out all of his competitors.” However, contrary to the common predatory-pricing narrative, “Rockefeller did *not* attempt to achieve his dominance in the oil industry by the costly and dangerous process of driving them out of business by cutting prices sharply. Instead, Rockefeller simply bought out his competitors, and paid handsome prices to boot.” And although Rockefeller did attempt to monopolize the industry, he was never successful:

Standard Oil was never to retain the dominance it had achieved in 1870—a dominance, by the way, that never even threatened to extend to

marketing or to crude oil production... [because] shrewd entrepreneurs began to realize that if Rockefeller were foolish enough to stand ready to purchase any oil refineries offered to him, well they would go heavily into a new, profitable business: the building of oil refineries solely for the purpose of "forcing" Rockefeller to buy them. (p. 95)

Rothbard does not feel the need to pretend altruistic motivations for the robber barons; he merely shows that even if they did have the monopolistic ambitions attributed to them by historians like Cashman, the market—rather than the government—was the mechanism that kept them in competitive check.

Chapters 4 through 6 are at the same time among the most important contributions to the book and the most tedious to read. In these chapters, Rothbard goes into incredible detail about the changing national demographics and voting patterns that led to the demise of the third-party system and the subsequent emergence of a government-centered two-party system that simply competed for different forms of control and intervention. Rothbard ties the political change to the social movements that were gaining steam at the time. Chapter 4 focuses on the religious demographics and how they affected voting patterns, as well as the religiously motivated prohibition movement. Chapter 5 incorporates women's suffrage and immigration into the analysis to demonstrate what led to the Democratic victory in 1892.

Chapter 6 brings this all together into Rothbard's original insight about the fall of the third-party system and, more importantly, the emergence of a Democratic Party that was no longer in favor of small government, but rather a populist party that favored regulations and inflation. This change did not begin with Woodrow Wilson, Rothbard makes clear; rather, it is the change that paved the road to Wilson. Chapter 6 concludes with an overview of the change in the parties, which Rothbard argues came predominantly in 1896. "The forces of hopped-up pietistic [William Jennings] Bryanism had captured the Democratic Party and changed its character forever from its ancient *laissez-faire* principles." Concurrently, "[William] McKinleyite pragmatism had transformed the Republican Party from the home of statist pietism... to a moderate statist organization cleaving only to the protective tariff, and dumping any emphasis on such emotional and pietistic issues as prohibition or Sunday blue laws." (p. 178)

The new party system was one in which both parties advocated a more involved federal government.

Rothbard spends two full chapters on Teddy Roosevelt. His focus in Chapter 7 is the “trust-busting” endeavors and Roosevelt’s war on the oil industry. Rothbard emphasizes the double-standard and personal interests that drove Roosevelt’s choice of which trusts were “good” and which were “bad.” Chapter 8 is devoted to Roosevelt’s involvement in the meat-packing industry, destroying the extant myth about the meat industry that has survived ever since Upton Sinclair’s publication of *The Jungle* in 1906. Contrary to standard assumptions, the large meat-packing firms welcomed and even lobbied for industrial regulation, which gave them a competitive advantage over small competitors.

The final unpublished chapter builds on the government-business marriage to the similar marriage between government, businesses, and intellectuals, the result of which was yet more monopolization (e.g., public utilities) and economic regulation. While historians today typically applaud the Sherman Anti-Trust Act and other “pro-competition” legislation, Rothbard makes it clear that the regulations that supposedly curtailed monopoly practices actually helped to create monopolies, and industry leaders actively pursued such legislation for precisely this purpose.

The previously published chapters of the book still stand as a great collection that places Rothbard’s historical research on this era in chronological order and provides a complete narrative that ties together all the complex factors that contributed to such significant events as the creation of the Federal Reserve and World War I. For those who have read these articles already, *The Progressive Era* will provide background and context that was not previously available.

A short note is also worth devoting to the editorial efforts of Patrick Newman. When Rothbard died in 1995, he left behind a mountain of unpublished manuscripts, some more complete than others. *The Progressive Era* sat in the archives of the Ludwig von Mises Institute for more than two decades because it was so far from a finished product that preparing it for publication was an enormous task. Evidence of the unfinished manuscript can be seen in the book, such as Chapter 10.3.A “Women’s Suffrage,” which contain paragraphs copied verbatim from the original draft

of Chapter 5.2.C, “Pietism and Women’s Suffrage.” However, because both Chapters 5 and 10 contain original and important material, no clean editorial cuts could be made without sacrificing clarity, and we are left to speculate as to what Chapter 5—or any chapter—might have looked like if Rothbard had survived to complete the manuscript. Additionally, Rothbard did not include all of his citations in the rough manuscript—something that was unnecessarily time-consuming for a man with such a prodigious memory. Dr. Newman has done a great service by tediously hunting and providing the individual citations from Rothbard’s personal library so readers can actually trace the sources for various claims. Such an effort is understandably uncommon in posthumously published works, but this greatly increases the value that *The Progressive Era* can offer to scholars.

Rothbard’s intellectual body of work is vast and interdisciplinary. With the exception, perhaps, of *Man, Economy, and State*, it is difficult to rank them in order of importance. However, I believe that *The Progressive Era* will find itself very near the top of Rothbard’s great works. More than twenty years after his death, Rothbard is proving that he still has much to teach us.

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