The volatility trap: why do big savers invest relatively little?

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The Volatility Trap: Why Do Big Savers Invest Relatively Little?

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Abstract

The more a country saves, the less it invests as a share of saving. We build a "store-or-sow" model of growth with precautionary saving and investment to study the nonlinear relationship between investment and saving. We contend that income volatility is an important variable for explaining saving and investment dynamics. Our results indicate that as permanent volatility increases, both investment and saving increase until a threshold at which point investment plummets while precautionary saving surges. In contrast, with larger volatility of temporary shocks, investment falls and precautionary saving gradually increases. Faced with high permanent volatility, big savers invest relatively little.

JEL codes: E21, E22, D91, O40

Keywords: volatility, precautionary saving, buffer-stock, investment

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I. Introduction

Feldstein and Horioka (1980)[1] indicate that there is a positive correlation between investment and saving rates; the data suggest that this relationship is nonlinear. More specifically, we find a strong negative relationship between the investment-saving ratio and the saving rate for a large cross-section of countries. The relevant question to address is therefore: Why do big savers invest relatively little? We contend that income volatility is an important variable in explaining investment and saving dynamics. The empirical evidence also suggests that the effect of volatility on investment is nonlinear and the effect differs across permanent and temporary dimensions. As a function of permanent volatility, investment resembles an inverted U-curve. Volatility of temporary shocks does not have a statistically significant effect. A high permanent volatility of income seems to induce countries to save a lot and invest relatively little.

We present a stylized model of the optimal investment and buffer-stock saving under uncertainty to illustrate how volatility drives the nonlinear relationship between investment and saving. The model is an extension of the precautionary saving model of Carroll (2001). We study aggregate rather than household dynamics and we introduce investment. The model thus features two assets: a safe asset and risky capital. The production function resembles that of Barlevy (2004). Investment and saving rates react differently to temporary and permanent shocks. The key result is that the relationship between the investment rate and the variance of persistent shocks has the hump-shaped pattern. The result stems from the fact

[1] See surveys by Obstfeld and Rogoff (1996) and Coakley et al. (1998).

that an increase in variance implies not only a higher saving rate but also a change in the portfolio allocation of saving between capital and a safe asset.[2] In the region of low persistent shocks, the tradeoff between investment and a safe asset is in favor of allocating the additional saving into capital to increase the average return rather than into a safe asset to help weather negative shocks. Yet when the critical point is reached, not only the additional saving is allocated into the safe asset, but the investment rate is also cut to face the heightened persistent risk. As a result, precautionary saving, or a safe asset, surges.

There is a large literature on the welfare cost of volatility and its effect on growth going back to Lucas (1987). In a survey, Loayza et al. (2007) present explanations of why the welfare cost of macroeconomic volatility in developing countries might be sizeable and how to manage it. Ramey and Ramey (1995) show empirically that there exists a significant and negative relationship between output volatility and growth in both OECD and non-OECD countries. Aizenman and Marion (1998) present a negative link between different measures of volatility and private investment in a set of 40 developing economies. In a recent study, Aghion et al. (2009) provide empirical evidence that for countries with low financial development, there is a negative relationship between real exchange volatility and growth. Barlevy (2004) presents a model where volatility (in productivity or policy) reflected in volatile investment has a direct and sizeable welfare cost through a production function of physical capital with diminishing marginal product. The result holds even if the average investment rate is kept constant.

[2] See Levhari and Srinivasan (1969) and Rothschild and Stiglitz (1971) for a detailed treatment of the problem with serially uncorrelated returns.

Our paper is related to the recent literature that explores precautionary saving in the open economy setting.[3] In particular, Fogli and Perri (2008) present empirical evidence of a positive relationship between macroeconomic volatility and changes in the net external position in OECD economies. This pattern is explained using a two-economy business cycle model where changes in the volatility of productivity lead to changes in precautionary saving. Our model emphasizes the difference between persistent and transitory shocks in terms of their effects on saving and investment. In the same fashion, Aguiar and Gopinath (2007) suggest that the main source of fluctuations in emerging markets stems from shocks to trend growth instead of transitory shocks around a stable trend. To some extent, our paper complements Aiyagari (1994) as we study the effects of uninsured aggregate risks (in the absence of liquidity constraints) on saving and investment while he studies the link between idiosyncratic risks under liquidity constraints and aggregate saving. Our contribution is that in disentangling the effects of permanent and temporary shocks on investment and precautionary saving, we emphasize the threshold effect of volatility. The empirical evidence also suggests a nonlinear relationship of volatility, investment, and saving.

The paper is organized as follows. Section II presents empirical evidence on the relationship among investment, saving, and volatility. Section III presents a stylized “store-or-sow” model (or alternatively, a silo model) to explain the observed empirical patterns, and Section IV concludes.

[3] See, for example, Borensztein, Jeanne and Sandri (2009) and Durdu et al. (2009).

II. Empirical Motivation

Descriptive Statistics

Table 1 presents descriptive statistics of the cross-country data for 75 countries over the 1970-2008 period.[4] On average, both the investment and savings rates are about 23 percent of GDP. The dispersion in the saving rates is larger, however. Similarly to Feldstein and Horioka's observation, the correlation between investment and saving rates is high.

Table 1. Descriptive Statistics

Variable	Obs.	Mean	Std-dev	Min	Max
Saving	75	23.2	7.3	9.7	43.8
Investment	75	23.2	4.1	15.6	35.8
Volatility[1]	75	0.14	0.05	0.07	0.31

[1]Standard deviation of exports' growth rates in constant USD.

However, the relationship between investment and saving seems to be nonlinear rather than linear. Figure 1 presents the linear relationship between average investment and saving rates, while Figure 2 shows the relationship between the investment-saving ratio and the saving rate. The relationship in Figure 2 has a large adjusted R-squared of 67 percent compared to only 30 percent in Figure 1. The empirical regularity in Figure 2 provides a convincing argument that the investment-saving ratio (I/S) is close to a linear and decreasing function of saving (S) across a wide range of countries. In other words, the more a country saves, the less it invests as a share of its saving.[5] Countries could save for two different purposes: A country saves to invest in capital, but it could also save to build a buffer against adverse aggregate

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[4] All data are taken from the World Bank's World Development Indicators (WDI) database. Investment is measured by gross fixed capital formation and saving is measured by gross domestic saving. See Table A1 in the Appendix for the list of countries and average investment and saving rates and volatility.

[5] In the lower right corner of Figure 2, countries with savings of around 40 percent of GDP invest only 40 percent of those savings, whereas in the upper left corner, countries with small savings of around 15 percent of GDP invest around 120 percent of their savings.

shocks. We argue that the volatility of income could be a common factor explaining the pattern observed. Next, we explore the extent to which investment and the investment-saving ratio can be explained by some measure of volatility.

Figure 1. Investment vs. Saving

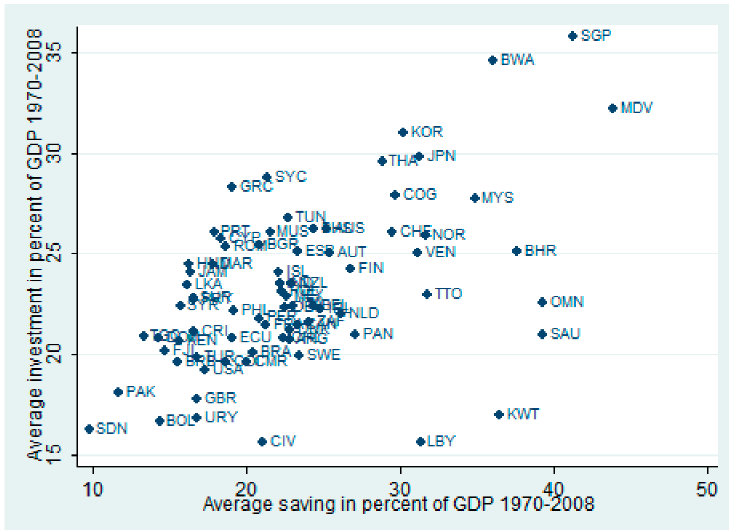
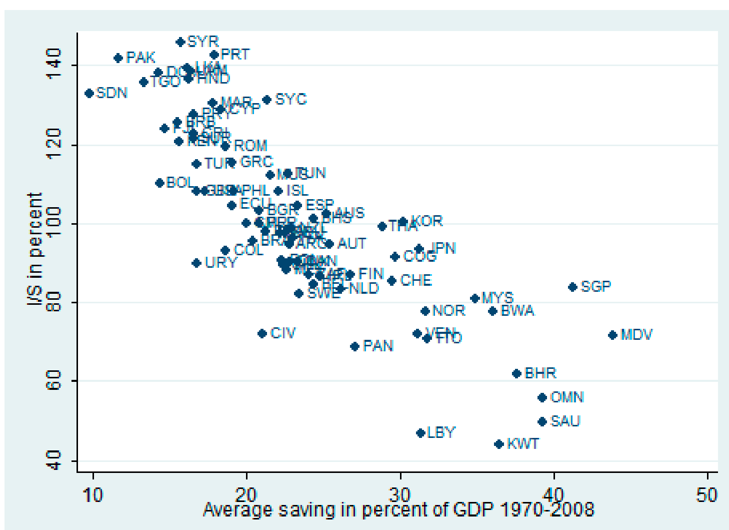


Figure 2. Investment-Saving Ratio vs. Saving



Panel Fixed Effects Regressions

We estimate the relationship between average investment and saving rates and a measure of volatility in a panel over the periods 1980-1990, 1991-2000, and 2001-2008. We use as a measure of volatility the standard deviation of the growth rate of exports of goods and services.[6] We focus on the volatility of exports as a proxy for the volatility of the production of tradable goods, which is relevant for the study of investment and saving dynamics according to the model presented in the next section. The choice of the standard deviation of the growth rate stems from our model where, based on Carroll (2001), permanent income follows a geometric random walk. Persistent and transitory volatility could potentially have different effects as noted, for instance, by Aguiar and Gopinath (2007). We use a Kalman filter to disentangle the permanent and transitory components of the logarithm of the exports of goods and services and infer standard deviations associated with permanent and transitory volatility.

We find the nonlinear relationship between investment and saving and volatility. The first column in Table 2 indicates a nonlinear relationship between investment and saving.[7] The coefficients on the standard deviation and variance of the growth rate of exports are insignificant. Yet including both temporary and persistent volatility of exports' growth in the regression (column 2) is supportive of the nonlinear relationship between investment and volatility. Investment is a quadratic function of persistent volatility with an inverted U-shape curve, reaching a maximum at a standard deviation of about 0.1. The coefficients on the

[6] The data are taken from the World Bank's WDI and deflated by the US CPI obtained from the same source.
[7] Controlling for time dummies and the logarithm of average real GDP per capita (WDI).

volatility of temporary shocks to exports' growth are insignificant. However, both saving and saving squared are significant suggesting that other variables such as financial development may be important in explaining investment. Equations (3)-(4) further confirm these results.[8]

Table 2. Panel Fixed Effects Regressions[9]

	Investment			
Variables	(1)	(2)	(3)	(4)
Transitory Volatility		-10.81		
		[-0.0416]		
(Transitory Volatility)^2		214.8		
		[0.106]		
Permanent volatility		59.42**	61.45**	68.50***
		[2.076]	[2.361]	[3.155]
(Permanent volatility)^2		-320.6**	-328.5***	-350.9***
		[-2.593]	[-2.984]	[-3.783]
Time dummy 1990	1.922**	1.762*	1.741*	
	[2.435]	[1.824]	[1.918]	
Time dummy 2000	1.164*	1.186*	1.172*	
	[1.975]	[1.933]	[1.922]	
log(gdp per capita)	0.367	0.753	0.799	-2.223
	[0.166]	[0.349]	[0.374]	[-1.504]
Saving	1.091***	1.348***	1.359***	1.384***
	[3.137]	[4.851]	[4.680]	[4.831]
(Saving)^2	-0.0147**	-0.0203***	-0.0206***	-0.0212***
	[-2.410]	[-4.712]	[-4.555]	[-4.774]
Volatility	-35.26			
	[-1.265]			
(Volatility)^2	110.6			
	[1.096]			
Constant	1.869	-9.198	-9.927	21.96
	[0.0772]	[-0.404]	[-0.448]	[1.377]
Observations	147	147	147	147
Number of countries	50	50	50	50

Robust t-statistics in brackets
*** p<0.01, ** p<0.05, * p<0.1

[8] Regressing the investment-saving ratio on saving and volatility confirms the scatter of Figure 2 and indicates a nonlinear inverted U-curve relationship with permanent volatility.
[9] Averages over 1980-1990, 1990-2000 and 2000-2008.

The panel regressions show that permanent volatility has a nonlinear effect on investment (and the investment-saving ratio). Investment is a hump-shaped function of permanent volatility with a volatility threshold around 0.1. The parsimonious empirical analysis suggests that permanent volatility could be the common factor explaining the relationship between investment and saving in the cross-section of countries. A rigorous test of this explanation is in our view an interesting avenue of research as saving is still statistically significant variable in the regression. In the next section, we present a stylized model to study the relationship between permanent and transitory volatility and the investment-saving choices that could shed light on the patterns observed in the data.

III. A Store-or-Sow or a Silo Model of Precautionary Saving and Investment

The model presented builds on the household/micro version of Carroll (2001). It has one tradable good—wheat—and at each period, a farmer chooses an amount of grain to store in a safe silo for winter or negative weather shocks as well as how much to sow for the next harvest. We simplify the problem by assuming that the investment rate, i.e. the share of output left for sowing, is constant.[10] We implicitly assume that the farmer's supply of labor is inelastic. The model can feature a nontradable sector as well. Assuming a separable utility function and using the market clearing condition that nontradable output must equal nontradable consumption, we abstract from the nontradable sector in our model.[11] More

[10] Below we calculate the optimal investment rate or "Golden Rule". The model dynamics are examined more closely in Cherif and Hasanov (2011).

[11] The assumption that tradable and nontradable goods are not perfect substitutes is not unreasonable, and we use separable utility to simplify the numerical problem.

importantly, since nontradable output is not storable, it is the tradable output and its volatility that matter in driving aggregate investment and saving.

Preferences

In period *t*, a farmer has the following expected utility over *T* periods:

$$E_t[\sum_{s=1}^{T} \beta^{s-t} u(C_s)] \tag{1}$$

where C_s represents consumption in period *s* and β is a discount factor. The utility function is of a CRRA form:

$$u(C) = \frac{C^{1-\rho}}{1-\rho} \tag{2}$$

where ρ is the relative risk aversion coefficient.

Production

Given a quantity K_s of grain sowed, the farmer harvests a quantity Y_s in period *s* such that:

$$Y_s = f_\xi(K_s, V_s)N_s \tag{3}$$

where N_s is a unit mean i.i.d temporary shock due to, for instance, weather conditions, and V_s is a unit mean i.i.d "permanent" shock due to, for example, productivity changes. At each period, the farmer can process wheat harvest into seeds at no cost. The process is assumed to be irreversible. We assume that the share of harvest used to be transformed into seeds each period is constant:

$$K_s = \xi f_\xi(K_{s-1}, V_{s-1}) \tag{4}$$

where ξ is the investment rate applied to the permanent production function $f_\xi(K_s, V_s)$ at time *s*, i.e. the share of permanent output re-invested. We define the production function as:

$$f_\xi(K_s, V_s) = \left(\varepsilon + \frac{1}{\xi}\right) K_s V_s \tag{5}$$

where ε lies in [0,1]. Therefore, permanent output follows a geometric random walk. Substituting (4) into (5), we get:

$$f_\xi(K_s, V_s) = \xi\left(\varepsilon + \frac{1}{\xi}\right) f_\xi(K_{s-1}, V_{s-1}) V_s \tag{6}$$

This functional form integrates a notion of diminishing marginal product of capital while providing parsimony. The greater the investment rate ξ is, the smaller the marginal product of capital is. At the same time, given the investment rate ξ, the production function is linear in capital substantially simplifying the numerical problem. In essence, the average growth rate is set to be equal to a fixed part (ε) of the investment rate (ξ) while the trend of average output is perturbed by both persistent and temporary shocks.[12] The law of motion of output is somewhat reminiscent of Barlevy (2004) and is a macro version of Carroll (2001).

In the presence of a safe asset, for a strictly positive investment rate, the harvest at the end of the year has to yield, on average, at least as much grain sowed, which holds if $\varepsilon > 0$.

Budget constraint

The quantity sowed K_s at each period is assumed to disappear after the harvest, which is equivalent to assuming a 100 percent depreciation rate.[13] At period *s+1*, the farmer possesses an amount of "wheat-on-hand" equal to the sum of the quantity of grain stored in the previous period, W_s, and the harvest left after the sowing (i.e. investment), $Y_s - \xi f_\xi(K_s, V_s)$. The budget constraint at any period *s* is:

[12] The parameter ε can be interpreted as a measure of productivity.
[13] The assumption of 100 percent depreciation is not necessary and can be easily relaxed.

$$W_{s+1} = W_s + Y_s - \xi f_\xi(K_s, V_s) - C_s \tag{7}$$

We assume that at a given period *t* the farmer has an initial quantity of grain stored in the previous period.

Solution

At every period, the farmer chooses its consumption and the quantity of grain to save in a silo after the grains to be sowed are put aside. The terminal condition is such that "wheat-on-hand," W_T, is consumed and K_T is left for the next generation as a bequest. The maximization problem is similar to that in Carroll (1997, 2001), where he shows that it can be normalized to depend on a unique state variable in the following Bellman equation (variables in small letters are normalized by permanent output):

$$v_t(w_t) = max_{c_t}\left\{u(c_t) + \beta E_t\left[\left(\xi\left(\varepsilon + \frac{1}{\xi}\right)\right)^{1-\rho} v_{t+1}(w_{t+1})\right]\right\} \tag{8}$$

Carroll also presents an endogenous grid points solution method to solve the problem numerically, which we use.

The equilibrium is defined as follows:

Given an investment rate ξ and an initial quantity of grain W_t, an equilibrium is a quantity C_t and an amount W_{t+1} such that the expected utility is maximized subject to the law of motion of output and the budget constraint for every *s* in [t, T-1] and such that W_T is fully consumed and K_T is not (it could be considered as a bequest for the next generation). Subsequently, we use a grid search to find ξ^*, the "Golden Rule" investment rate, or the investment rate maximizing U_t over ξ in [0,1].

Calibration

Preferences: Following Carroll (2001), the coefficient of risk aversion ρ is set to 2, the lower end of the range generally used in the literature. The discount rate is set to the standard value of 4 percent.

Technology: We choose ε to be equal to 0.1 implying that a country with an investment rate of 20 percent would grow on average at 2 percent per year, broadly in line with what we observe for advanced countries. It is also consistent with a pooled regression of growth rates on investment rates over 1970-2000.

Shocks: Permanent (V) and temporary (N) shocks are assumed to be unit-mean log-normal.[14] Standard deviations (σ_V, σ_N) vary in [0.01, 0.3] range. This range corresponds to the range of standard deviation of shocks observed for macro aggregates (see the previous section).

Initial conditions: We assume that initial wealth is equal to zero and normalize initial income to 1. Results should be interpreted in percentage of initial income.

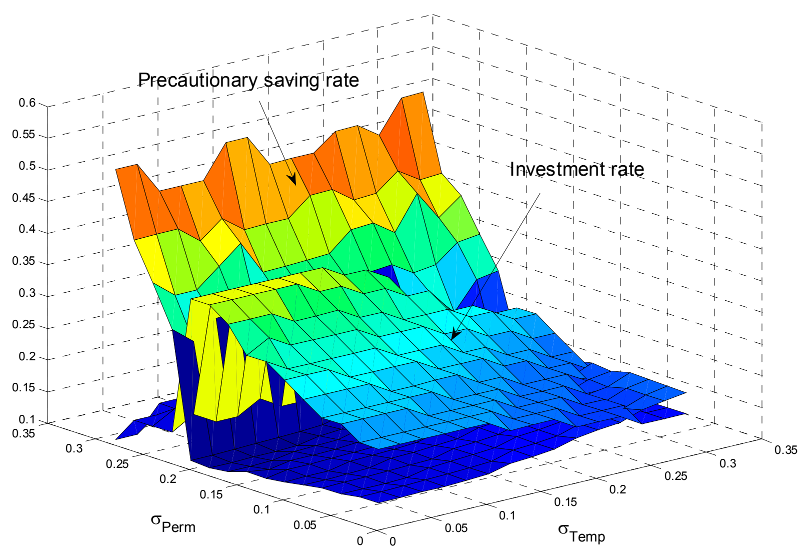
Results

As temporary volatility increases, the investment rate decreases while saving in the safe asset slightly increases. Figure 1 shows the optimal investment rate ξ^* and the initial safe asset

[14] We also assume a probability of 1.7 percent of a temporary drop of 30 percent in production following Barro's (2008) rare disaster analysis. It is in fact consistent with Carroll's unemployment probability in the micro version of the model.

saving rate (or precautionary saving rate) for every value of (σ_V, σ_N) in [0.01, 0.3] range. In general, an increase in temporary volatility leads to a gradual increase in the precautionary saving rate and a decrease in the investment rate (Figure 2). Note also that the overall saving rate is slightly decreasing. The result is in line with the findings of Levhari and Srinivasan (1969) in their study of a combined saving-portfolio problem with serially uncorrelated returns. Under certain conditions,[15] an increase in the variance of one asset leads to a decrease of the saving rate and a portfolio reallocation in favor of the safe asset.

Figure 1: Initial Precautionary Saving and Investment Rates



Along permanent volatility, the pattern of the investment and precautionary saving rates is substantially different. An increase in volatility results in an increase in the investment rate and a slightly decreasing precautionary saving rate until a certain threshold at which point investment collapses and precautionary saving surges. The threshold occurs around standard deviation of 0.2, beyond which investment rate falls rapidly to stabilize at around 10-15

[15] In particular a CRRA of greater than one as in our setup.

percent of income while the precautionary saving rate grows to 50 percent of income at the standard deviation of about 0.3 from 20 percent at the standard deviation of 0.2 (Figure 3).

The trade-off between volatility and return explains the pattern observed. Using the notation of Rothschild and Stiglitz (1970), let $V(\theta, \xi)$ be the indirect utility of the representative agent, where θ is a random variable and ξ is the control variable (investment rate in our case). They showed that an increase in the variance of θ would lead to an increase in the optimal value of the control variable ξ^* if the second derivative of V_ξ is always positive. In our case, V_ξ changes its convexity when the variance of θ is bigger than a certain threshold. When volatility is low, the marginal utility of an increase in the average return of the risky asset outweighs the marginal disutility of higher volatility. On the contrary, when the variance of the shock is high, an increase in the average return of the risky asset does not compensate for higher volatility.

Figure 2. Precautionary Saving and Investment along Temporary Volatility

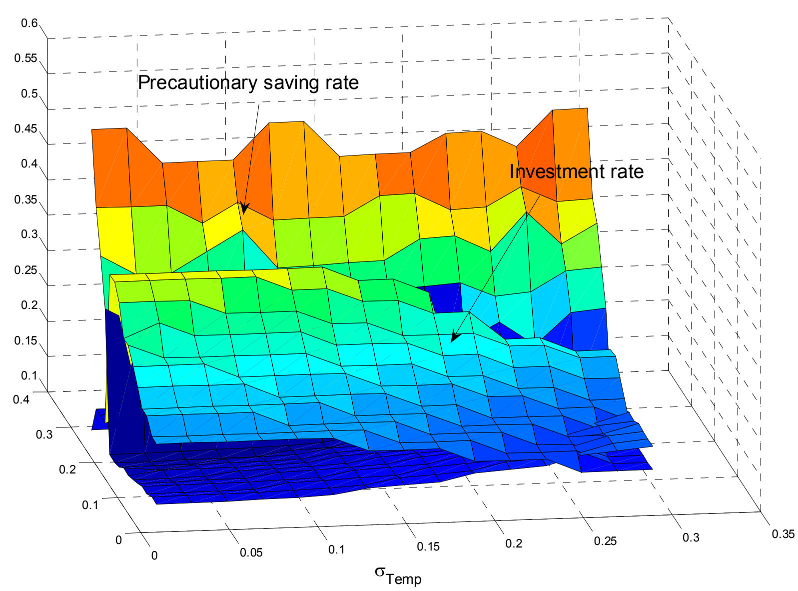
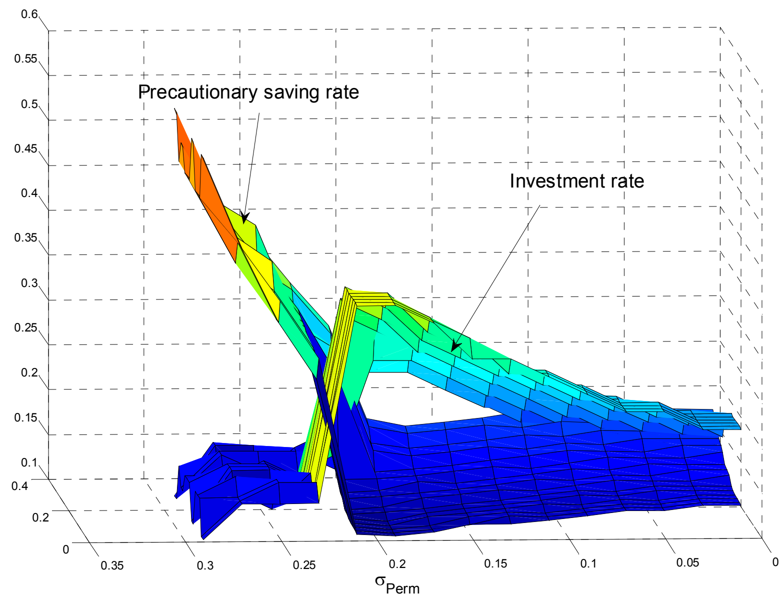


Figure 3. Precautionary Saving and Investment along Permanent Volatility



IV. Concluding Remarks

We study the relationship between investment and saving and volatility. The data suggest that the correlation between investment and saving is high but the linear relationship is rejected in favor of the nonlinear one. In panel regressions, we find that volatility is an important variable in explaining the investment-saving relationship.

To explain the observed empirical patterns among investment, saving, and volatility, we extend Carroll's (2001) micro model with precautionary saving to incorporate investment while studying aggregate dynamics. Our results suggest that along the permanent volatility dimension, investment and saving increase until a threshold at which point investment drops while precautionary saving surges. The result is different with higher temporary shocks where investment falls and precautionary saving gradually increases.

The model has implications for high volatility countries, in particular commodity exporters. With high permanent volatility, precautionary saving (safe asset) is relatively large while investment is relatively little, explaining why high savers invest little. Lowering volatility would reduce the need to save in a safe asset (one can interpret it as T-bills of advanced countries).

Our paper could shed a new light on the Feldstein and Horioka (1980) puzzle. The nonlinear investment and saving relationship we find is strong and holds across many countries as opposed to previous literature. This literature finds that investment-saving correlation is quite robust although the coefficient of the saving rate in the investment regression seems to have fallen in OECD countries and is substantially smaller for non-OECD countries. Obstfeld and Rogoff (2006) note that existing theoretical explanations of the puzzle are not supported by empirical evidence. Our paper suggests a possible answer. Permanent volatility explains part of the nonlinear relationship between investment and saving observed in the data. An interesting avenue for future research would be to study further the theoretical and empirical relationship among investment, saving and volatility.

Finally, our results have implications on the global imbalances debate. Global imbalances could be the product of heightened uncertainties and volatilities that countries face. It is optimal for a country to accumulate large precautionary saving if faced with high permanent volatility, which we observe for commodity exporters. It could also explain why some emerging markets started piling up foreign reserves and lowered investment, following the crises of the 1990s. One implication of the model would be that if commodity prices, or exports' volatility, were to be more stable albeit at lower levels, then surpluses of these countries would significantly decrease.

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Appendix

Table A1. Country Data

Country	Code	Investment	Saving	Volatility
Argentina	ARG	20.67	22.76	0.13
Australia	AUS	26.21	25.18	0.10
Austria	AUT	25.04	25.38	0.10
Belgium	BEL	22.38	24.36	0.10
Bulgaria	BGR	25.44	20.88	0.19
Bahrain	BHR	25.13	37.64	0.22
Bahamas, The	BHS	26.22	24.37	0.17
Bolivia	BOL	16.64	14.32	0.14
Brazil	BRA	20.06	20.41	0.11
Barbados	BRB	19.62	15.56	0.09
Botswana	BWA	34.60	36.06	0.17
Canada	CAN	21.43	23.30	0.07
Switzerland	CHE	26.03	29.51	0.10
Chile	CHL	20.80	22.39	0.14
Cote d'ivoire	CIV	15.63	21.09	0.13
Cameroon	CMR	19.63	19.98	0.13
Congo, Rep.	COG	27.85	29.66	0.21
Colombia	COL	19.59	18.65	0.12
Costa Rica	CRI	21.13	16.59	0.10
Cyprus	CYP	25.76	18.34	0.10
Germany	DEU	22.33	22.46	0.10
Denmark	DNK	21.22	22.85	0.10
Dominican Republic	DOM	20.80	14.26	0.18
Ecuador	ECU	20.81	19.07	0.12
Spain	ESP	25.10	23.37	0.09
Finland	FIN	24.21	26.82	0.10
Fiji	FJI	20.17	14.70	0.11
France	FRA	21.44	21.29	0.09
United Kingdom	GBR	17.75	16.76	0.09
Greece	GRC	28.29	19.03	0.11
Honduras	HND	24.49	16.23	0.13
India	IND	23.52	22.13	0.09
Ireland	IRL	22.25	24.78	0.12
Iceland	ISL	24.08	22.08	0.15
Italy	ITA	22.43	22.99	0.09
Jamaica	JAM	24.07	16.39	0.08
Japan	JPN	29.84	31.28	0.09
Kenya	KEN	20.64	15.62	0.17
Korea, Rep	KOR	31.03	30.24	0.10
Kuwait	KWT	17.00	36.50	0.25
Libya	LBY	15.62	31.30	0.25
Sri Lanka	LKA	23.39	16.15	0.09
Morocco	MAR	24.50	17.81	0.10
Maldives	MDV	32.21	43.85	0.22
Mexico	MEX	22.90	22.61	0.09
Mauritius	MUS	26.06	21.51	0.11
Malaysia	MYS	27.76	34.84	0.12
Netherlands	NLD	21.97	26.18	0.10
Norway	NOR	25.90	31.63	0.09
New Zealand	NZL	23.52	22.93	0.09
Oman	OMN	22.55	39.25	0.18
Pakistan	PAK	18.06	11.67	0.09
Panama	PAN	20.94	27.09	0.22
Peru	PER	21.79	20.80	0.15
Philippines	PHL	22.17	19.18	0.10
Poland	POL	23.14	22.26	0.14
Portugal	PRT	26.02	17.86	0.11
Paraguay	PRY	22.69	16.52	0.19
Romania	ROM	25.37	18.62	0.17
Saudi Arabia	SAU	20.94	39.29	0.31
Sudan	SDN	16.22	9.73	0.28
Singapore	SGP	35.79	41.24	0.12
Suriname	SUR	22.81	16.50	0.23
Sweden	SWE	19.93	23.46	0.11
Seychelles	SYC	28.75	21.34	0.11
Syrian Arab Republic	SYR	22.39	15.67	0.18
Togo	TGO	20.86	13.28	0.18
Thailand	THA	29.56	28.81	0.09
Trinidad and Tobago	TTO	22.94	31.75	0.17
Tunisia	TUN	26.74	22.67	0.12
Turkey	TUR	19.84	16.76	0.12
Uruguay	URY	16.81	16.74	0.13
United States	USA	19.21	17.33	0.08
Venezuela, RB	VEN	24.99	31.19	0.23
South Africa	ZAF	21.61	24.05	0.13

Source: World Development Indicators, World Bank