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Quantitative Measures of Bond Liquidity

By Vadim Konstantinovsky and Bruce D. Phelps

For all its importance to fixed income investors, policymakers and academics, bond liquidity is difficult to measure. This article discusses two new ways of measuring bond liquidity and how portfolio managers and researchers can make use of them

Transaction costs enter the decision-making process of all market participants. The trade-off between the cost of trading and the opportunity cost of not trading influences the timing and size of individual trades. Hence, many investors think of "liquidity" in terms of cost. Liquidity Cost Score (LCS) defines liquidity as the cost of trading. It represents the cost of a standard, institutional-size, immediate round-trip transaction and is expressed as a percentage of the bond's price.

Another view of liquidity is the degree to which trades move the bond's price. To accommodate this view, Price Impact Measure (PIM) defines liquidity as the price impact of trades. It measures the ratio of a bond's daily absolute excess return (net of market) to its daily dollar transactions volume.

Both measures can be aggregated across bonds in a portfolio as well as monitored over time. Portfolio managers can leverage these measures to quantify the liquidity of their holdings and compare them to a benchmark. Researchers can use these consistent, quantitative metrics to facilitate rigorous market liquidity studies.

LIQUIDITY COST SCORE (LCS)

The LCS calculation relies on simultaneous two-way quotes from traders. Traders can post bid and ask quotes in two different ways: as yield spreads over Treasurys or as price spreads. As a result, LCS is computed in one of two conceptually identical ways:

$$LCS = (Bid\,spread - Ask\,spread) \cdot OASD \quad \text{if bond is spread-quoted}$$

$$LCS = \frac{Ask\,price - Bid\,price}{Bid\,price} \quad \text{if bond is price-quoted}$$

OASD is the option-adjsusted spread duration of the bond. For every bond, the LCS corresponding to each quote is computed daily, and at the end of the month averaged into the bond's monthly LCS value.

Investors can shop for best execution, so quotes from one broker-dealer do not always represent the "effective" market. Thus, LCS may overstate "best-execution" cost. Nevertheless, LCS is a conservative measure of transaction costs.

The reliability of trader quotes may be uneven across bonds. Actively traded issues are likely to be quoted both at executable levels and uniformly among broker/dealers. The LCS methodology distinguishes between such bonds and those whose quotes are likely to be *indications* rather than transactable, two-way markets. It relies on two criteria: "on-the-run" and "high volume." To be on-the-run, a bond has to meet several conditions —e.g., to be a large and recent issue with a maturity close to one of the main issuance points (2-, 5-, 10-, and 30-year). However, if it has extremely high trading volume (the high-volume criterion), these conditions are waived. When LCS methodology identifies such indicative quotes it widens the bid-ask spread to make it more likely to be executable, in the spirit of making LCS a conservative measure.

Last but not least, a bond may have no two-way trader quotes at all. The LCS econometric model estimates what investors would likely have to pay to trade this bond. The model relies on monthly cross-sectional regression analysis to estimate a statistical relationship between observed LCS of quoted bonds and bond attributes. It assumes that the same relationship holds for non-quoted bonds and calculates their LCS accordingly. Such regression-based LCS are adjusted upward because a bond without a single trader quote in a month is likely to be less liquid than a quoted bond with similar attributes. The LCS models are market-specific. Attributes important for, say, EUR covered bonds, may not matter, or indeed even exist, in the USD credit market.

Investors would find the LCS model intuitive. Recent and large issues are cheaper to trade than seasoned and small ones, so bond age and issue size matter. High-risk securities (i.e., bonds with wide spreads to Treasurys) tend to be costlier to trade than low-risk ones. A trader taking a position in a high-risk bond will quote wider bid-ask spreads, so some measure of credit risk must be among the model variables. In the USD corporate market, for example, a bond's option adjusted spread (OAS) is one of the main determinants of its liquidity. The left panel of Figure 1 shows the historical relationship between bonds' observed LCS (i.e., those of trader-quoted liquid bonds) and their OAS.

Figure 1. LCS vs. OAS and trading volume, usd ig corp, jan 2007 – apr 2016
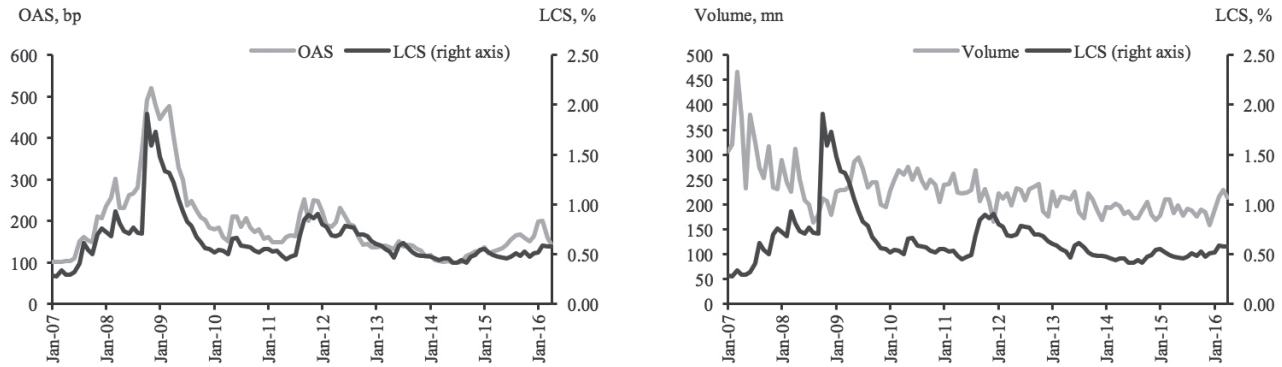
Source: Barclays Research

Figure 2. USD Credit LCS, Jan 2007 – Apr 2016
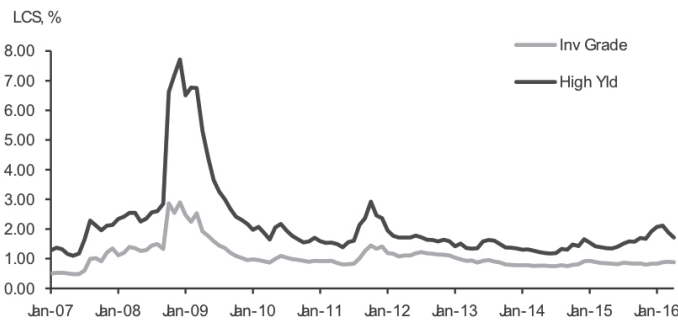
Source: Barclays Research

The model formulation relies on empirical evidence like this. However, intuition is not always accurate. For example, trading volume is often considered a proxy for liquidity. Yet, as the right panel of Figure 1 shows, the historical relationship between volume and LCS has been tenuous. However, during the credit crisis, we do see a negative relationship between LCS and volume, so we chose to include volume in the LCS model as a control for possible market turbulence in the future.

LCS is useful not only as a measure of current liquidity; it can provide valuable insights into past market conditions. Figure 2 shows the historical LCS for the entire USD IG and HY Credit markets. Based on these time series we can draw two conclusions. First, the credit crisis was to a large extent a liquidity crisis. Second, despite the often-heard sentiment of today's poor liquidity conditions, the objective reality is that, over recent years, LCS have been only modestly higher than pre-crisis levels.

MEASURING BONDS' RELATIVE LIQUIDITY

LCS is an absolute measure that fluctuates with overall market liquidity, so for a particular bond, a time series of its LCS does not show where the bond has stood relative to its peers. Another liquidity measure, Trade Efficiency Score (TES), is an intra-market bond-level liquidity rank ranging from 1 (best) to 10 (worst). TES helps investors to quickly judge a bond's liquidity relative to similar bonds, both currently and over time.

TES blends LCS and trading volume into a single relative score that reflects both cost and flow and comes close to how traders think about liquidity. As a relative measure, TES can serve as a liquidity filter in portfolio construction. It also helps with back-testing investment strategies. Using only low-TES bonds in a back-test shows how realistic the strategy is in practice, and how achievable are its promised returns.

Figure 3. Trade Efficiency Score (TES) Buckets, USD IG Corp ex 144A, April 2016

Vol Decile + LCS Quintile	TES	# bonds	# bonds %	MV %	Age, yr	Issue size mn	OAS, bp	OASD	LCS, %	Vol, mn
2 and 3	1	764	13.62	29.86	2.3	1,700	133	7.90	0.531	371.6
4 and 5	2	595	10.60	14.37	3.2	1,052	136	6.67	0.705	106.8
6	3	397	7.08	8.06	4.0	874	143	6.69	0.925	70.6
7	4	439	7.82	7.93	4.0	780	143	6.78	1.016	52.5
8	5	463	8.25	6.84	4.6	630	140	6.65	1.103	34.5
9	6	453	8.07	6.74	5.1	627	143	7.04	1.206	22.5
10	7	543	9.68	6.62	5.2	515	149	6.97	1.244	13.9
11	8	521	9.29	5.82	5.3	471	158	7.11	1.286	7.8
12	9	507	9.04	5.08	6.0	419	168	7.59	1.436	3.7
13-15	10	921	16.41	8.49	7.9	375	184	6.78	1.559	1.1

Source: Barclays Research

Figure 4. Estimated Autoregression Coefficients by TES Bucket, Feb 2007 – Sep 2014

	Intercept	Lag(-1)	Adj R²
TES1 ER	0.02	0.17	0.02
	(0.11)	(1.32)	
TES2 ER	0.07	**0.28**	0.07
	(0.34)	(2.14)	
TES3 ER	0.08	**0.34**	0.10
	(0.41)	(2.75)	
TES4 ER	0.06	**0.37**	0.13
	(0.34)	(2.87)	
TES5 ER	0.07	**0.39**	0.14
	(0.40)	(2.98)	
TES6 ER	0.05	**0.43**	0.18
	(0.29)	(3.27)	
TES7 ER	0.05	**0.43**	0.17
	(0.27)	(3.17)	
TES8 ER	0.03	**0.44**	0.19
	(0.17)	(3.40)	
TES9 ER	0.03	**0.50**	0.24
	(0.14)	(3.89)	
TES10 ER	0.06	**0.48**	0.22
	(0.38)	(3.67)	
Corp ER	0.05	**0.34**	0.11
	(0.26)	(2.58)	

Source: Barclays Research

Based on the AIC, we estimate the model using one lag. Standard errors are Newey-West with a truncation parameter of 3. t-statistics are in parentheses. Coefficients in bold are statistically significant at the 5% confidence level.

To compute TES, each bond in a particular market is assigned to an OASD-adjusted LCS quintile, and to a monthly trading volume decile. (LCS is a product of the bid-ask spread and OASD, so the duration adjustment is necessary for relative-liquidity comparison of bonds with different duration.) Then, these two values are added, and the sum is mapped to a TES ranking from 1 to 10.

As Figure 3 shows, TES buckets differ in the number of bonds and market value allocation. The attributes of bonds in different TES buckets also vary, substantially and predictably. By construction, low-TES buckets contain bonds with low LCS and high trading volume, mostly large, recent issues. Average issue size decreases dramatically in higher-TES buckets, while average age increases.

How to Test the Quality of a Liquidity Measure

In a liquid market with many potential buyers and sellers constantly inquiring, quoting and trading, prices and excess returns quickly reflect news and changing investor views. In other words, the market is informationally efficient. In contrast, limited quoting and trading activity slows the propagation and evaluation of new information. Hence, one way to assess efficiency is to check for "price inertia." In other words, do past returns help explain current-period returns? If so, then the market for the bond may not be very liquid. We measure price inertia by regressing current-month excess returns (ER) on previous-month excess returns:

$$ER_t = \alpha + \beta \times ER_{t-1} + \varepsilon$$

To investigate informational efficiency of the USD IG corporate market, we partition it into liquidity strata based on TES. A comparison of price inertia in various TES buckets can reveal whether low-TES buckets are indeed more efficient than high-TES ones.

Figure 4 presents the results of this regression analysis. For the corporate market as a whole, the one-month lag coefficient (0.34) is statistically significant, and 11 percent of the variation in

the current-month returns is explained by the previous-month excess returns.

However, price inertia is not uniform within the corporate market. In low-TES buckets (i.e., high liquidity), lagged excess returns have little explanatory power, which attests to their information efficiency, while in high-TES buckets (i.e., low liquidity), we see significant coefficients that explain a meaningful percentage of the bucket's excess return volatility, demonstrating strong price inertia.

We conclude that market efficiency varies significantly within the corporate market and is correlated with liquidity. The results also suggest that TES, and hence, LCS, does a good job partitioning the market by liquidity.

PRICE IMPACT MEASURE (PIM)

An alternative way to measure liquidity is to see how transactions affect bond prices. Order flow exposes market makers to the possibility of facing better-informed counterparties. To avoid being stuck with an undesirable position, market makers adjust prices of illiquid bonds more than those of liquid ones, so issues whose prices are more sensitive to transactions might be considered less liquid than those whose prices are less sensitive. We have constructed a bond-level price impact measure (PIM) for USD investment grade corporate bonds. PIM complements LCS and, like LCS, is available since January 2007. PIM captures a bond's price change (i.e., return) per dollar of transactions volume and is calculated on the daily basis as the ratio of the bond's absolute excess return (net of the Corporate Index excess return) to its daily dollar transactions volume in millions:

For each bond, we average these daily R values over the month to arrive at a bond's monthly PIM. Aggregating across bonds provides a useful market-wide measure of market impact.

Figure 5. Price Impact Measure (PIM), USD IG and HY Corp, Jan 2007 – Apr 2016
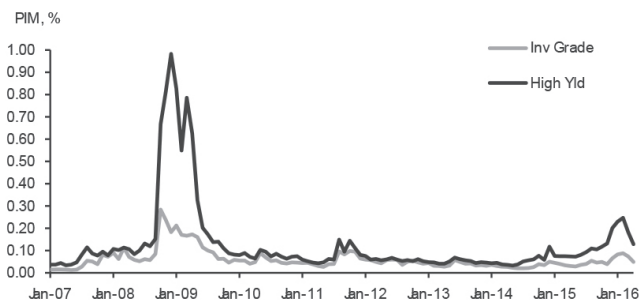
Source: Barclays Research

The market PIM (Figure 5) is dynamic. We see large movements, in the expected direction, during the 2008 financial cri-

$$R = \frac{|Daily\ ExRet|}{Tvol}$$

sis, the European sovereign crisis, and the credit market volatility of late 2015. The market PIM was remarkably low prior to the 2008 crisis, approximately one-third of today's magnitude, reflecting a unique period in our financial markets. PIM began to rise at the onset of the mortgage crisis in mid-2007. We do not observe any secular increase in PIM in recent years.

Relationship of PIM with LCS and Bond Attributes

We observe that the market PIM follows the moves of market attributes in an intuitive way (Figure 6, pg. 32, top). Increases in market risk (OAS) are associated with rises in price impact costs. What is the relationship between PIM, a price-impact liquidity measure, and LCS, a transactions costs liquidity measure? Despite their very different approaches to measuring liquidity, we see a close relationship (Figure 7, pg. 32, middle), with a monthly, market-level correlation of 0.92. However, the coefficient of variation for PIM is more than 1.75 times that for LCS, suggesting that PIM may contain some additional information.

ESTIMATING RETURN IMPACT OF CORPORATE BOND PORTFOLIO REDEMPTIONS

One potential application of PIM is to estimate the return impact of portfolio redemptions. If a fund manager has to redeem a portion of the fund, the PIMs of the positions to be liquidated can be used to estimate the net market impact (assumed to be negative) on the portfolio's return.

To construct redemption impact curves, we assume that managers hold "liquidity sleeves" within their portfolios, composed of diversified baskets of highly liquid bonds, sufficiently large to meet redemptions and constructed to have a beta of 1 versus the portfolio's benchmark. Using bond-level PIM, we estimated redemption impact for two $10 billion corporate funds, IG and HY. Figure 8 (pg. 32, bottom) shows these redemption impact curves for two different months representing very different market conditions.

Figure 8. Estimated Portfolio Return Impact Curves, USD IG and HY Corp, $10 Billion Fund

For example, in January 2016, a 10 percent redemption (i.e., $1 billion) in the IG Corp fund would produce a negative, portfo-

Figure 6. Average Monthly Correlations of PIM with Bond Attributes, USD IG Corp, Jan 2007 – Sep 2015

Attribute	PIM
Age	0.06
Size	-0.11
T-vol	-0.11
OAS	0.30
DTS	0.36
LCS	0.37
TES	0.18

Source: Barclays Research

Figure 7. PIM vs. LCS, %, USD IG Corp, Jan 2007 – Apr 2016
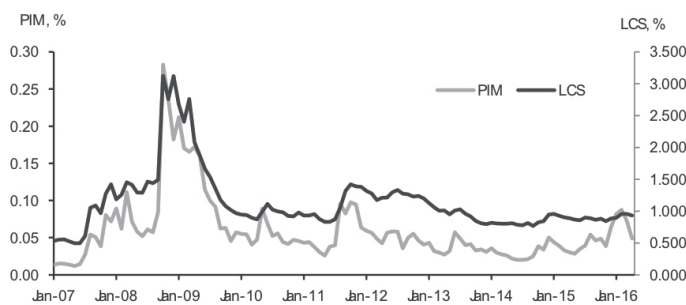
Source: Barclays Research

lio-wide return impact of approximately 2.5bp net of market. In November 2008, however, the same 10 percent redemption
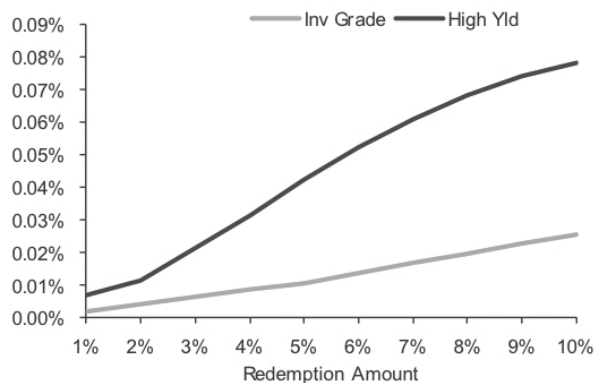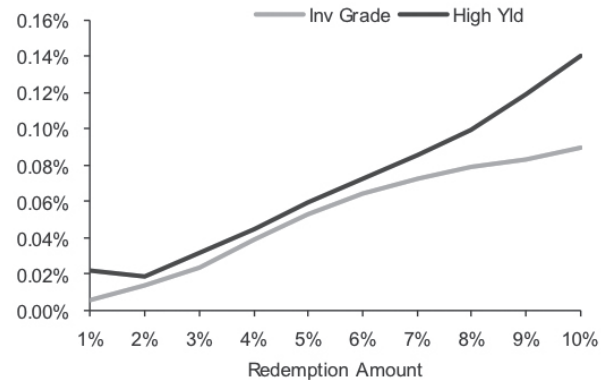
January 2016

Figure 8. Cont.

November 2008

would entail a 9bp impact. Other redemption strategies can be analyzed in the PIM-based framework as well.

Finally, while each redemption strategy has its own expected redemption impact cost, it also entails an often-overlooked on-going cost. To maintain a satisfactory redemption impact curve, a highly liquid basket needs to be periodically refreshed (to remain highly liquid) and rebalanced (to keep beta = 1), with the attendant transactions costs. Moreover, the liquidity sleeve creates an opportunity cost as this portion of the portfolio is unavailable for expressing and harvesting the manager's alpha generating views. Using LCS and the manager's historical alpha, it is possible to quantify and compare the cost of employing a particular redemption strategy versus the estimated impact cost in the event of redemptions. ∎

Vadim Konstantinovsky, CFA, is a director in the Quantitative Portfolio Strategy Group of Barclays Inc. in New York. He can be reached at *vkonstan@barclays.com*.
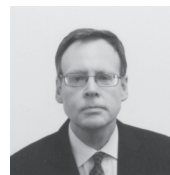
Bruce D. Phelps, CFA, is a managing director in the Quantitative Portfolio Strategy Group of Barclays Inc. in New York. He can be reached at *bruce.phelps@barclays.com*.

The Effects of Decades of High Inflation in Argentina

By Jorge Lopez Airaghi Edited by Thomas J. Egan, Jr.

Investment professionals in the United States understand inflation at a distance in their professional activities but rarely experience it in their lives as consumers. This paper describes the day-to-day effect on consumers and companies in a country with extremely long periods of inflation, such as Argentina. It will illustrate how government policies can control or exacerbate the effects of high inflation on the economic and social aspects of the country's population.

MONETARY CAUSES OF INFLATION

The French economist Jacques Rueff was one of the first to alert the world to the era of inflation after World War I. His book, *L'âge de l'inflation* (1964), stated that the transition from the gold standard to the capacity of each central bank to issue its own currency was the initial cause of the monetary inflation since not all central banks have the discipline not to issue currency above their gold reserves.

Money Creation's Effects on Levels of Inflation

Most central banks have the capacity to control their money supply and have sometimes used it to cause the destruction of their own currencies, either through negligence or the force of circumstances. Assessing cause, effect and blame is difficult though. Having lost World War I, Austria assumed the debts and reparations bill for the much larger Austro-Hungarian empire. Similarly, the German hyperinflation of 1923 wiped out the middle class and impoverished the working class. It sowed seeds that sprouted when the depression that followed the 1929 crisis led to National Socialism and Hitler's totalitarian power. Perhaps paradoxically, Japan's debt is 245 percent of gross domestic product (GDP) today and hyperinflation has not reappeared (yet).

Money creation can have an immediate impact on the growth of inflation. If the population is not willing to hold the country's paper money, inflation will increase as the velocity of money accelerates. When the government administration has to deal with extraordinary situations (like the U.S. financial crisis in 2009), there might be a temporary need to create money to cover deficits. If such economic intervention is done on an exceptional

short-term basis, the population will retain confidence in their currency as a savings unit. The newly issued money will not have an inflationary influence since the key issue—velocity of use—will not have an impact on aggregate demand. People will retain the excess money and prices will not be impacted. If a government regularly increases the money supply to fund expenses that exceed the country's capacity to support them, citizens will lose confidence in the local currency. Money velocity will increase and result in inflation.

Argentina's Currency

Decades of inflation in Argentina have caused the local currency to completely lose its power as a savings unit. Most long-term savings are held in U.S. dollars. It is estimated that more than US$400 billion are held as savings and remain outside Argentine investments. The figure is the equivalent of 62 percent of Argentina's 2014 gross national product (GNP). This is a rational outcome when the excess money supply greatly exceeds the increase in the GDP and causes an increase in prices. Argentina´s half century of inflation is perhaps the most devastating experience ever of money supply exceeding domestic growth.

Until recently, every Argentine government for over 50 years has had more expenses than income. Governments have tried to cover the fiscal deficits by issuing more currency and using foreign debt. These actions have created a monetary and social phenomenon: a country with almost five decades of permanent medium/high inflation, with self-generated peaks of hyperinflation.

Argentine administrations have often controlled exchange rates to try to contain inflation, which is a form of tariff. The combination of inflation and the fixed exchange rates has caused the prices of local food and essential products to be close to the prices in the United States and Europe—despite the fact that average wages and salaries are 40 percent less than in the United States and in most European countries. As internal prices rose the exchange rate needed to be devalued to keep export prices on a competitive basis.

INFLATION LEVELS IN ARGENTINA

Tables 1 and 2 illustrate the levels of inflation in Argentina over the last 70 years. The tables show the level of inflation for various five-year periods from 1945 to 2015. The inflation for the period 1975 to 1994 is shown separately in Table 2 because of the hyperinflation during that period. The average inflation rate was 27 percent for the period 1945 to 1974, which was immediately prior to the hyperinflation period. The average inflation rate was 514 percent for the period 1975 to 1994, with inflation at nearly 5,000 percent in 1989 at the transition to a civilian government.

Table 1
Argentina
Average YoY Inflation (%): 1945 to 1974 and 1995 to 2015
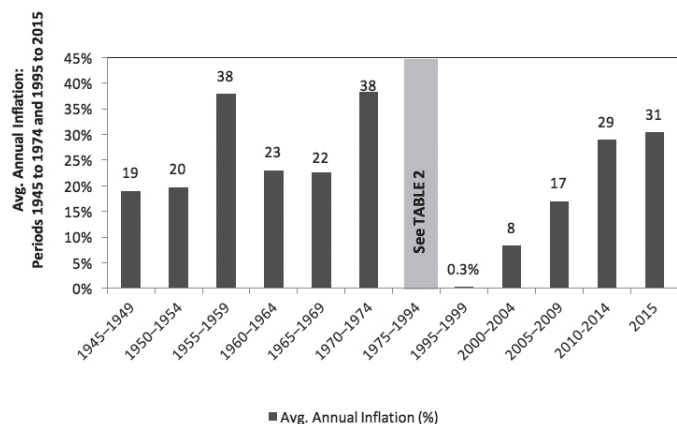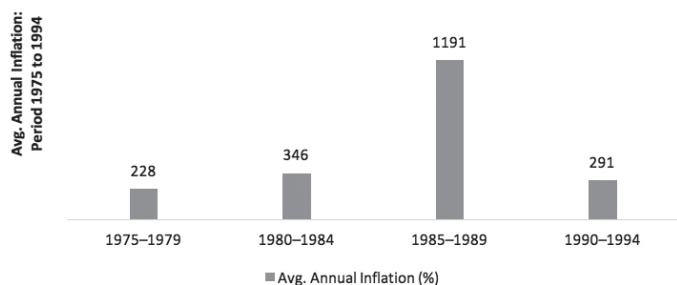

Table 2
Argentina
Average YoY Inflation (%): 1975 to 1994

This all took place amidst a background of political uncertainty and struggle. After the world's first female president, Isabel Perón, was deposed in 1976, Argentina experienced bitter civil internal hostilities caused by terrorism until 1983 and lost the Falklands War in 1982.

In 1991, Argentina established a comprehensive stabilization program, the Convertibility Plan, to eliminate inflation, restore macroeconomic balance and end the long history of high inflation. The program was based on a strict exchange rate rule, where the parity was fixed by law at one peso per U.S. dollar. The program required the monetary base to be fully backed by international reserves, and the central bank was restrained from financing budget deficits—breaking the mechanism that caused inflation. The government also privatized large, state-owned firms in the telecommunications, airline, railway, petroleum, mining, steel and defense sectors in an attempt to cut losses and the subsequent fiscal deficit that caused the mismanagement of these state enterprises. Attracted by the sale of state-owned firms, foreign direct investment increased dramatically (even though much of it focused on natural resource extraction and services).

Inflation was essentially eliminated during the 1995 to 1999 period. However, external shocks affected the Convertibility Plan: the Mexican crisis of 1994 to 1995, the Asian crisis of 1997, and the 1998 Russian financial crises together with the Brazilian crisis of 1999 had overwhelming effects. Interest rates increased, the U.S. dollar appreciated, and a slump in the world prices of primary products stalled the Argentine economy. Argentina's comparative advantage (low-cost production) in world markets was brutally hit. A new government administration decoupled the peso from the U.S. dollar beginning in 1999 in an attempt to aid the very poor, most hurt most by the currency strategy. Inflation in the following 15-year period from 2000 has averaged about 20 percent.

Consequences of High Inflation in Argentina

The whole population of Argentina has experienced every stage of inflation for their entire lives. Counting outliers, the average inflation rate has been over 140 percent annually over the past 70 years. Even excluding the hyperinflation period, 1975 to 1991, the inflation rate has averaged about 20 percent, with a few brief periods of low inflation and deflation. No Argentine has ever had a day during his lifetime without worrying about inflation. Political and economic decisions were drivers of inflation and have made a major impact on the social, political and economic development of the country. The political institutions in Argentina have failed to control inflation. The political consequences were inevitable as many governments fell during that period.

Double-digit annual inflation for more than three decades has had a sociological impact on every Argentine. Even the most financially illiterate have learned that inflation means powerful income transfers from the poorest to the richest (who have access to power and resources outside the system) and to the government administration through higher nominal taxes. They understand that the local currency cannot hold its value, which is a self-fulfilling prophecy. Clearly, this stressed lifestyle has triggered certain typical and dysfunctional social behaviors, which are utterly peculiar to Argentina. These issues have deeply affected the citizens in their day-to-day actions.

Human beings want to be able to control their lives and plan for their future. High inflation rates reduce the ability of people to properly plan their personal finances—causing feelings of insecurity, uncertainty and fear. Inflation in Argentina requires constant analysis of costs and prices; it makes long-term planning

impossible. The lack of certainty about meeting daily expenses also has a high impact on self-esteem and personal relationships.

Some sectors can force an increase in income much faster than other sectors (for example: salaries negotiated by unions with the price-setting companies). This leads many to feel their personal situation is unfair and to resent other sectors of the population that fare better under inflation. High inflation has resulted in mass social confrontation. Wage struggles are expressed in wild-cat strikes. The population is under permanent stress because of the effect of such strikes on various supplies.

The high level of inflation in Argentina has also caused unique economic and social behavior. Citizens have relaxed views about their tax obligations to the government, creating an enabling environment for corruption. Those who evade paying their taxes are seen as acting in legitimate defense of their assets and income against the effects of extreme levels of inflation. The public sector finances become even weaker due to this behavior.

Lending is concentrated in the state as loan taker, crowding out the private sector from banking loans. Most enterprises are only able to get credit marginally for very brief periods. The ultimate source of credit is the credit from suppliers to customers, both domestic and foreign, and loans from international banks to finance import and export trade. All loans carry monetary tightening through interest rates compatible with inflation or other corrections, according to indexes. Medium and small companies finance their sales with their own assets and supplier credits.

All cost increases are immediately passed through in selling prices to preserve productive assets. Because of Argentina's permanent high inflation, adjustments are always somewhat higher than expected inflation. The frequent periods of high inflation lead banks to lend at extremely high nominal rates. Monetary corrections combined with tight deadlines can be extremely dangerous for the survival of small companies.

Public services like transportation, police, education, health, water and electricity supply have failed to keep their tariffs up to meet their costs. Equipment maintenance and new investments have been delayed and do not meet the required needs to support depreciating assets. This has caused severe disruptions in their normal operation.

During the last 40 years, the U.S. dollar has performed the monetary function of storing value, and is the means of payment and saving. Any individual in Argentina with saving capacity will use dollars to price and pay for houses, land and any other durable high-cost asset. Bank deposits in local currency never exceed 30 days. Real interest rates have been usually negative against inflation. Citizens use bank deposits in the short term only when there is an expectation that interest rates will exceed inflation

and peso devaluation—something that rarely happened until the new administration recently took over.

A real victim of high inflation is the very small, practically non-existent Argentine capital market. Short-term deposits, between seven and 30 days, cannot effectively support a market of equities, bonds and mortgage loans in the national currency. The stock market cannot develop in both the number of investors in companies and the daily volume of transactions.

Fixed interest rate obligations like mortgage loans for financing long-term housing are totally nonexistent, regardless of government subsidies for these purposes. Because the cost of credit is high, it is nearly impossible for the middle class (not to mention the lower-income population) to purchase or even rent a home. The uncontrolled issuance of money, which increased the monetary base by 13 times since 2013, also created a gap between property prices and wages.

Economic Actions of New Administration
On the back of the global decline in the value of commodities, which reduced foreign demand for Argentine goods, a new president was elected at the end of 2015. The new administration quickly learned that official economic figures were unreliable. They also found that the outgoing administration left a scorched earth policy—a last-minute strategy targeted to hide or even destroy anything that might be useful to the new administration. The level of available foreign currency reserves was negative. The fiscal deficit was an unprecedented 6 percent of GDP, and the money issued to cover the deficit exceeded all reasonable limits. During its last 30 days the outgoing administration increased the total number of government employees by 15 percent with no specific job duties. The strategy was intended to modify the tax redistribution and force the new government to increase the money supply.

The overall panorama was discouraging; poverty levels exceeded 15 percent, 1 in 5 young people was neither studying nor working, the inflation rate was greater than 30 percent (the third highest in the world), the currency was artificially overvalued by 40 percent, and 43 percent of the economically active population was working for the government. The country had the largest global tax pressure in its history.

The new administration acted immediately to stabilize the economy. It successfully restored the country's ability to borrow from foreign sources, cut down on unnecessary government expense, and made an agreement with labor unions to control wage increases until the production levels increased.

Several measures were instituted to start gradual and moderate medium-term corrections to reduce inflation: increasing production from the private sector, decreasing taxes and opening the controlled exchange market. The currency was allowed to

float, which initially resulted in devaluation. The actions were taken gradually to avoid a strong economic shock. However, the first impact has been an increase in the inflation rate. This is the textbook example of inflation of external origins, which appears after devaluation.

Summary and Conclusions

No country escapes the forces of inflation; however, not all inflation is bad. A persistent low level of inflation is seen as optimal by policymakers in Europe, the United States and Japan. In that Goldilocks scenario, the expansion cycles are long; contractions are generally short and bearable. Individuals can save without the fear of loss of purchasing power. Capital markets finance the capital investment needs and any deficit of the public sector. Social struggles are peaceful and the informal economy is only marginal. At a low level of inflation, wealthy savers stay in the system and help fund the dreams of young debtors. The world economy is dominated by countries with low inflation rates. These industrial countries practice close monetary cooperation to contain the expansive inflationary forces with hikes in interest rates and limited intervention in exchange rates among their currencies—especially the U.S. dollar against the British pound, the Japanese yen and the euro. Monetary and exchange policy is the main instrument to contain the risk of an overheating economy in these countries.

In 70 years, hyperinflation has occurred in just nine countries *and no country other than Argentina has ever suffered 50 years of high inflation*. The price of goods and services has been a constant concern of the Argentines since the mid-20th century. It is no exaggeration that inflation has influenced the social, political and economic development of the country. The new administration has made some positive initial strides to control inflation and gain support for the local currency. Only time will tell what effect these actions will have on the level of inflation and the lives of Argentine citizens.

Jorge Lopez Airaghi is an economist and financial executive in Argentina. He currently publishes a weekly economic report on Argentina. ■

Thomas J. Egan, Jr., FSA, CFP, EA, is actuary of liability driven investments (LDI) at Columbia Threadneedle Investments. He can be contacted at *thomas.egan@columbiathreadneedle.com*