FRMO Corp.
2019 Shareholder Letter

September 10, 2019

Dear Fellow Shareholders,

At the end of the 2019 fiscal year, FRMO had $126.3 million of shareholders' equity, $191.6 million of total assets and $53 million of cash. As has been the case for the past two years, we continue to develop businesses that are intended to serve as an alternative to traditional investments. Prior to describing the efforts, it might be useful to explain why an alternative to traditional investments is needed.

Part I: New Ventures

A. <u>The Problem with Traditional Investing</u>

The oldest asset class is debt. It is also the largest asset class in the world. According to *A History of Interest Rates* by Sidney Homer, the ancient Israelites did not permit lending at interest.[1] In the Persian empire, lending at interest was considered to be an act of dishonor. The Babylonians and the Romans permitted it, but limited the rate that could be charged.

In the contemporary world, there is a not insignificant and growing amount of negative-yielding sovereign debt. These are investments that are guaranteed by the governments that issue the bonds to result in a loss. Surely, this requires some alternative.

Yet, even in the U.S., where the yield on a 10-year Treasury is 1.63% at the time of this writing, it should be self-evident that, after taxes and the perhaps 2% official inflation rate, this investment is certain to experience a decline in purchasing power over the fullness of time.

One might assert that equities are the obvious alternative; however, equity valuations are powerfully influenced by interest rates. Consequently, with interest rates at all-time historical lows, equities are expensive. The market capitalization of the Russell 3000 stock index is about $29 trillion. This is 1.36x the level of U.S. GDP. It is true that this statistic has been higher. The St. Louis Federal Reserve uses the Wilshire 5000-to-GDP ratio, which is a very close comparable. According to this measure, in September 2018, the ratio was actually 1.44x, and it is presently 1.39x.

In February 2016, which was not a uniquely weak period for equity prices, the Wilshire 5000-to-U.S. GDP ratio was 0.96x. This latter figure is simply a statistic that one might consider to be roughly a historical average. Obviously, a decline to this level, even without a recession that might reduce GDP, would not be pleasant.

[1] Sidney Homer, *A History of Interest Rates* (New Jersey: Rutgers University Press, 1963).

Another popular alternative is private equity; however, private equity has limited transactional liquidity and is generally associated with much leverage; so much so, in fact, that it might be more aptly termed leveraged equity. Even a slight increase in interest rates from current levels would be challenging for many firms. For example, a normal high yield credit borrower might, in the current environment, pay 4.5% in annual interest charges. Even if this rate were to increase just to 6%, this would imply a 33% higher debt service expense.

One further challenge of investing modernity might be worthy of mention. Asset managers must now compete with index businesses that charge zero fees. Of course, index providers are not charitable institutions. One mode of profit generation for them, which escapes the notice or interest of their customers, is through the exchange traded fund associated with a given index. In many cases, the provider, as opposed to the fund participants, keeps the securities lending fee that can be generated on the ETF holdings. Conventional asset managers are either not custodians of their clients' assets or, if they are, certainly cannot retain for themselves such securities lending revenue. In any event, as one can readily envisage, conventional asset managers suffer from significant structural disadvantages.

B. <u>Cryptocurrency</u>

In past shareholder letters, we separated cryptocurrency from the other FRMO assets, such as investment funds, Horizon Kinetics LLC ("Horizon Kinetics"), and the Horizon Kinetics revenue stream. However, cryptocurrency, due to appreciation, is now too important to compartmentalize within the Investments category of the balance sheet.

It should be stated at the outset that cryptocurrency investing is very controversial insofar as the risk of failure is very great. The logic of the investment is that it should be self-evident that the bond and cash traditional asset classes are in the process of being debased, so that it is reasonable that an alternative to unlimited issuance fiat currency should be developed. The cryptocurrencies that we have chosen as investments are from among the exceedingly few fixed issuance currencies with constrained and perpetually declining rates of interim inflation. For example, bitcoin will have a 1.80% annual inflation rate between May 2020 and May 2024. From May 2024 to May 2028, the rate of inflation should be 0.90%. The rate of inflation will continue to decline every four years until the year 2140, after which time there will be no further supply.

In theoretical terms, one would think that a fixed issuance currency should have greater purchasing power and, therefore, a larger market capitalization than an infinite issuance fiat currency. For instance, the Argentine peso has lost over 51% of its value relative to the U.S. dollar since December 2017. Similarly, the Iranian currency, now known as the rial, has collapsed against the U.S. dollar. Yet, the market capitalization of the Iranian rial is more than twice that of bitcoin.

However, a positive outcome is by no means certain. Hence, in the search for alternatives, it seemed reasonable at the time to make small scale investments in alternatives within the context of the FRMO/ Horizon Kinetics existing organizational structure. For instance, in the case of the Polestar Fund, the original investment in the Grayscale Bitcoin Trust (GBTC)—known as the Grayscale Bitcoin Investment Trust until January 2019—was $708,483. This investment now represents 11.06% of the Polestar Fund. The market value of the entire Polestar Fund is about $151 million as of this writing. A similar approach was undertaken in the cases of the Multi-Strategy Fund and the CDK Fund. All of the direct and indirect cryptocurrency investments of FRMO relative to the 2019 fiscal year end equity of $126.3 million is roughly equivalent to 6.63% of that sum.

The obvious advantage of this scaling approach to investing in cryptocurrencies is that the investments are rather small and, in the event of failure, the FRMO balance sheet would not experience structural damage. The disadvantage is that it creates a labyrinthine investment structure that is difficult to understand from outside FRMO.

Some other examples might suffice to make this point clearer. On the FRMO May 31, 2019 balance sheet, the reader will note the sum of $94,998 of computer equipment net of $62,335 of accumulated depreciation. This figure represents the FRMO direct investment in cryptocurrency mining, as distinguished from investments in cryptocurrency as such. As of several days ago, the market value of the cryptocurrency mined and held was roughly $337,000. The important point is not to calculate the rate of return on this investment. In any event, in this connection, one would need to include the monthly operating costs for hosting and power.

Since cryptocurrency mining is a bona fide operating business, one would need to know, with some degree of precision, the estimated useful life of the mining equipment, which mainly consists of servers. The problem is that the estimated useful life of these machines cannot be established with precision. One can only derive that knowledge empirically. Thus far, we have been pleasantly surprised by the durability and performance of our purchased equipment.

Horizon Kinetics directly operates a somewhat larger number of servers than FRMO. In addition, Horizon Kinetics operates two cryptocurrency mining LLCs with a combined number of servers—including both the servers currently operating and those that are on order—that exceeds 5,700 if one includes all entities for which Horizon Kinetics is responsible as the operator.

In addition, Horizon Kinetics owns a majority interest in Hash Master Tech LLC, a hosting company devoted to cryptocurrency mining that is located in the southeastern United States. None of these various investments includes FRMO's direct ownership interests in the cryptocurrency limited partnerships operated by Horizon Kinetics.

There are, as well, two other smaller cryptocurrency efforts that should be commented upon. The first is a $76,000 investment in Digital Currency Group, which might be considered in some sense to be a digital currency venture capital fund. However, Digital Currency Group also owns Grayscale, which in turn operates the Grayscale Bitcoin Trust in addition to other cryptocurrency-related funds, some of which are now publicly traded. Reasonable minds might differ widely as to the market value of our original investment in Digital Currency Group.

In this connection, one should also consider our investment in Winland Electronics. Winland has been buying trade claims related to cryptocurrency. It should be noted that these are not cryptocurrency investments as such. In one case, a trade claim was purchased against a bankrupt cryptocurrency company for a discount to cash. The base case return is to repatriate principal plus another increment due to the size of the balance sheet cash. However, there is also a cryptocurrency inventory that could accrue to the benefit of the trade claim holder. Essentially, this is a free call option on cryptocurrency that might become very valuable. In the event that this is not the case, Winland holds a conventional trade claim.

In another instance, Winland purchased a mechanic's lien on equipment owned by a bankrupt cryptocurrency company. The equipment is effectively at an enormous discount to cost due to the value of the mechanic's lien purchased. Moreover, the company in question is now operating profitably in bankruptcy. Thus, there seems to be more than adequate coverage at several levels.

Thus, as one can clearly see, the cryptocurrency investments were made within the context of our conventional organizational structure. In principle, there are many ways to reorganize the operating business if cryptocurrency manages to gain wider acceptance. Another, perhaps more realistic possibility is that some aspect of FRMO's cryptocurrency activities might prove to be far more lucrative than others. Different success scenarios might require different organizational structures.

The important point is that there is operational exposure to essentially every significant aspect of cryptocurrency, except trading, which we have no plans to enter. At Hash Master Tech LLC, we even have the ability to repair our own equipment. FRMO owns 7.434% of this company.

C. The Virtues of the Labyrinthine Approach

The purpose of the lengthy exposition in section B is to explain one given exposure across all of our traditional organizational structures. The purpose of this labyrinthine approach is not to be opaque, although this is the unfortunate effect; rather, the purpose is to explore new asset classes and new business opportunities in a gradual manner that limits risk and disruption. Risk is not merely the possible loss of capital.

New asset classes are a learning experience for everyone. If expanded in a gradual, deliberate manner, every employee in all of Horizon Kinetics can have the opportunity to develop new knowledge and skills in an environment free from the pressure of substantial loss of capital. The existing businesses continue much as before. Thus, in the event of an individual project failure, employees are at liberty to return to their former responsibilities, or perhaps transfer to another related more successful project. Equally important, since the risk in any one project is constrained, the luxury exists to give the projects sufficient time to solve the inevitable difficulties that arise in any new venture.

In the narrow field of cryptocurrency mining, one will observe from Note 5 on page 16 of our annual report that we have four separate mining ventures. These include HK Cryptocurrency Mining, LLC; Horatio Mining LLC; HK Cryptocurrency Mining II, LLC; and Hash Master Tech LLC; in addition to the FRMO directly owned mining equipment previously discussed. In failure mode, which is always possible, FRMO has the balance sheet strength to withstand losses. In success mode, we will obviously require a new organizational structure. As of yet, that structure is left deliberately undefined, because it will depend on exactly what might be successful and the degree of that success.

Part II: Traditional Ventures

D. Investment Funds

For the fiscal year May 2018 – May 2019, the investment funds performed reasonably well, given the lack, in our view, of very many alluring investment opportunities. The Multi-Strategy Fund advanced 13.7%, CDK appreciated by 14.9%, and the Polestar Fund returned 15.4%.

It should be noted that Texas Pacific Land Trust is a very large position in all three funds. It is also worth noting that the Polestar Fund holds about 32.6% of the fund in cash and another 1.1% in short positions of path dependent ETFs. CDK has a 33.7% cash position with about 2% in short positions of path dependent ETFs. The Multi-Strategy Fund has roughly a 3% cash balance and about 4.5% short positions, largely in path dependent ETFs.

E. Horizon Kinetics

Horizon Kinetics itself is developing alternative products. One such effort is focused around the short sale of path dependent ETFs that are invested in ‘tangible assets.’ Tangible assets, in our nomenclature, are those assets that historically have been beneficiaries of inflation. Our first effort in this regard has been open for more than one year. It is possible that we will create a second such fund with a focus upon a different segment of tangible assets. Horizon Kinetics also has a fund invested in the volatility asset class. There is also another new fund devoted to a single investment in the exchange space, much like the existing South LaSalle Fund, but simply invested in another exchange. There is scope for more activity in this area.

The salient point is that it is becoming increasingly difficult to unearth undervalued opportunities in conventional investments. The rise of indexation, which is actually the rise of the price-indifferent buyer, is a significant factor in this regard. The very predictable result is a paucity of investment opportunities. As a consequence, at Horizon Kinetics, individually managed accounts, as well as mutual funds, generally carry high cash balances.

F. Exchanges

In the field of securities exchanges, there are some rather exciting developments. Exchanges are actually developing single-listed proprietary products as alternative investments. This is a significant development for exchanges generally. Historically, exchanges merely listed and traded that which corporations wished to list. Currently, exchanges are attempting to respond directly to the need of the investment community for non-traditional investments.

Towards that end, two of our exchange investments are collaborating on a new product. On May 1, 2019, Miami International Holdings (MIAX’s parent company) and the Minneapolis Grain Exchange (“MGEX”) announced an agreement under which the MGEX will serve as the exclusive listing, trading, and clearing exchange for the SPIKES Volatility Index. This product is intended to compete with the VIX Index , which is a measure of the volatility implied by S&P 500 index options. The SPIKES Volatility Index is a measure of 30-day volatility on the SPDR S&P 500 ETF.

Volatility is a relatively new asset class. One of the problems with indexation is that individual securities, and even national stock indexes, are becoming increasingly more correlated. As a consequence, it is becoming more difficult to genuinely diversify in conventional assets. Volatility, however, is negatively correlated with the equity market. When the stock market is elevated, as is now the case, volatility is generally low. Conversely, during market declines, volatility increases. Also, there is a predictable mean reversion aspect to volatility. Consequently, many investors have come to believe that investing in volatility, either long or short, is less idiosyncratic than investing in conventional equity.

SPIKES futures should begin trading in the fourth quarter of 2019. It might be recalled that the total MGEX market value is only $84 million, and this includes the value of the Grain Exchange Buildings. Hence, a successful futures product could have a quite positive impact on MGEX. The fair value of FRMO's investment in MGEX, held in South LaSalle Partners, L.P., is $7.4 million at FRMO's 2019 fiscal year end.

FRMO's investment in Miami International Holdings, Inc. is carried at its $250,000 cost. MIAX (the options exchange) now has a 9.37% share of all options trading in the U.S. Average daily volume is 1, 523,442 contracts for July 2019.

Subsequent to the end of its fiscal year, FRMO made a $250,000 investment in the American Financial Exchange. This is the group that just launched Ameribor futures in partnership with the CBOE. Ameribor is designed to replace the London Interbank Offered Rate ("LIBOR"), which will cease to exist in 2021, in accordance with British government rulings

LIBOR is an extraordinarily important index, because it is the reference rate for loans and derivatives all around the world. It seems incredible that for many years loans and derivatives in the U.S. were priced in accordance with a rate set by a small number of banks in Europe. This system was subject to many abuses, and it was deemed impossible to reform by government mandate and increased supervision. It is possible that it will be replaced by Ameribor, which provides an entirely new concept in the reference rate, because it is an index of actual transactions consummated by many U.S. banks. Since it is ex-post facto based upon empirical data, it is much less subject to potential abuse. Given the size of the LIBOR market, it is easy to visualize the success case for Ameribor futures.

G. Short Selling

It was necessary to realize very substantial profit on some of our short positions this fiscal year, because the underlying short instrument was discontinued. Upon covering, new positions in alternative instruments that are quite similar were initiated. This necessitated gain realizations and tax payments that were unavoidable.

As is apparent from our balance sheet, FRMO now carries 47.4% more short positions, by market value, than was the case at the prior fiscal year end. Against a short position of $8.133 million, we have over $86 million of excess margin availability. This figure does not include available margin at the fund level and cash balances in those funds.

It is also worthy of note that Horizon Kinetics itself holds over $70 million of current assets. Hence, there is ample liquidity available for opportunities, except that there exists a lack of opportunities.

H. Horizon Kinetics Hard Assets LLC

One of the problems with the labyrinthine approach to corporate organization is that it is difficult to obtain information if one follows GAAP. In accordance with GAAP, it is disclosed in Note 2 on page 7 of our annual report that FRMO owned 15.49% of Horizon Kinetics Hard Assets LLC. Of course, the reader really needs to know the market value of the investment. On July 31, 2019, this value was roughly $11.235 million. Of course, the primary investment is in shares of the Texas Pacific Land Trust.

Texas Pacific Land Trust is a unique enterprise that was formed as a result of the bankruptcy of the Texas Pacific Railroad in 1888. Much of the land holdings are located in the Delaware Basin, which forms a part of the Permian Basin in West Texas. In our view, it is an irreplaceable asset that simply could not be recreated in this form, even by a very large company with huge resources. Its developmental possibilities are beginning to be exploited.

However, the area lacks pipeline capacity, which will probably require years to adequately provide. As a consequence, natural gas is being flared and brings no revenue in cases of flaring. Adequate pipeline capacity will solve this problem. The area contains extremely valuable water rights that could become royalty income, as well as surface rights that can provide easement income. This is in addition to conventional oil and gas royalties. It is also important to observe that hydrocarbons have been in a bear market for the past five years. The price of West Texas Intermediate oil has declined by about 50% in the past five years.

Essentially, Texas Pacific Land Trust is a royalty income stream with free infinite call options on the price of energy as well as advances in drilling technology. In a royalty situation, price increases simply increase revenue and net profit with no concomitant increase in cost. Similarly, improvements in technology by other firms result in enhanced production, which increases revenue and net profit with no concomitant cost. Consequently, it is not difficult to understand our enthusiasm for this investment.

Of course, an issue with this investment is the 19th century governance structure of the enterprise, which we believe should be updated in accordance with the modern conception of corporate governance. Toward that end, Horizon Kinetics engaged in a proxy contest and ultimately in some litigation as well. At the end of July 2019, the various parties agreed to establish a Conversion Exploration Committee consisting of seven members.

Since we are committed to confidentiality under the terms of the agreement, we are not at liberty to comment on the work of the committee. However, civil discourse can be surprisingly productive. In any case, when one views the progress of Texas Pacific Land Trust in the context of the energy bear market of the past five years, one finds it difficult to restrain one’s optimism as to what might happen in a better environment.

I. Concluding Remarks

Our working assumption is that at the current level of interest rates globally, the central banks of the world are reaching the limits of asset inflation via lower interest rates. Ultimately, the past 38 years of debt creation will require higher rates of money supply growth than has been the case for a very long time.

In this sense, let us consider the following data from the U.S. Census Bureau. In the year 2000, the median income in the U.S. was $30,775. The latest reading is $34,489. That is a rate of growth of 2.4%.

However, in the year 2000, a median new home cost $166,103. In 2019, a median new home costs $315,677. This is an inflation rate of 3.4% per annum. In the year 2000, according to the Kaiser Family Foundation, the average annual premium for health insurance for a single covered worker in the U.S. was $2,471, and it was $6,896 in 2018, which was an inflation rate of 5.9%; for families, the 2018 figure was $19,616, which was the product of a 4.2% inflation rate.

During this period, while investors benefitted from asset price inflation across the standard categories—equities, bonds and real estate—the public was debased insofar as income is concerned. In the future, perhaps the public will demand reversal of debasement. As a consequence, the investors might need to contend with asset deflation.

This is only a hypothesis. As such, it might well be erroneous. Consequently, we have tried to undertake measures that might greatly increase shareholder value in this environment. However, we have undertaken everything in measured fashion within the context of our historical structure that could continue unchanged if the hypothesis proves false.

We hope that we have presented the data in such manner that the risk control element is comprehensible, as well as the observation that, in success mode, we might need a somewhat different operating structure. In any case, we remain very grateful for the support of our shareholders and we will continue to strive to be worthy of that support.

Murray Stahl
Chairman and CEO

Steven Bregman
President and CFO