

Are Target-Date Funds Enveloped by Unrealistic Expectations?

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Target-Date Funds (TDFs) have taken the 401(k) arena “by storm”. They are investment options in 91% of defined contribution plans and are used by about 72% of 401(k) participants. Two-thirds of those participants have their entire account invested in a single TDF.¹ TDFs are also the Qualified Default Investment Alternative (QDIA) in 85% of 401(k) plans that auto-enroll participants.² In ten years, it is projected that TDFs will hold 70% of defined contribution plan assets in contrast to the 20% they contain today.³

The popularity of this Congressionally sanctioned⁴ hassle-free investment option should surprise no one. After all, TDFs have been aggressively sold to both fiduciaries and participants as professionally managed, well-diversified funds whose riskiness, as reflected by their stock to bond ratio, decreases over time in a pre-determined manner (the TDF family’s glide path).

Fiduciaries are also assured that the glide path was arrived at by highly experienced investment professionals using a rigorous statistical process, Monte Carlo simulations, and thus has a high chance of delivering retirement security to the typical, financially unsophisticated participant if he fulfills two “responsibilities”:

- investing his entire 401(k) account in the TDF whose name includes the participant’s targeted year of retirement; and
- making sure the combined contribution rate — employee’s and employer’s — is between 10% and 15% of pay.⁵

The Department of Labor’s (DOL’s) regulations under the Employee Retirement Income Security Act (ERISA), however, do not absolve fiduciaries of the duty to prudently:

- select and monitor their choice of TDFs; and
- provide communications that help participants determine whether or not a TDF is appropriate for them, and if it is, how to maximize its benefits, including monitoring whether or not they are on-track to achieve retirement security.

Little has been written, however, on how fiduciaries should assess, on an on-going basis, whether or not the TDF family they have selected is actually putting their participants on the road to a financially secure retirement. What is available are:

- a variety of benchmarks and some advice on how to select one;⁶ and
- analyses, such as those from Morningstar⁷ and Standard and Poor’s⁸, that provide very good overviews of the TDF marketplace, including comparisons of performances, glide paths, and asset allocations.

Despite having this material available, fiduciaries must still ask:

“Do these readily available benchmarks and analysis provide significant insights as to whether or not a TDF family’s real-world behavior is actually delivering lifelong

retirement security to participants who follow conventional wisdom, including contribution levels and investing their entire 401(k) accounts in a single TDF?”

The non-trivial nature of this question has been succinctly summarized by John Ameriks, Ellen Rinaldi, and Yesim Tokat. They candidly stated what benchmarks don't tell fiduciaries:

- *“What return does an investor need to earn to accumulate enough money for retirement?”*
- *Does the investment provider expect its mix of embedded asset allocation advice and fund selections to meet this return threshold?*
- *Is the fund meeting these expectations?*
- *What risks are implied by these expectations?”*⁹

If fiduciaries are to fulfill their duty of monitoring their TDF family's effectiveness in delivering retirement security, the fiduciaries must develop their own approaches for answering this question. To begin this process, fiduciaries must recall that a benchmark is:

*“A standard or point of reference against which things may be compared.”*¹⁰

Unfortunately, TDF vendors do not help fiduciaries create appropriate benchmarks. To make matters worse, vendors do not publish how their TDFs' real world performances compare to the growth rates derived from their Monte Carlo simulations that are necessary for participants to achieve retirement security.

This lack of transparency requires fiduciaries to question the claims of TDF purveyors, such as:

*“While target-date funds can be an appropriate choice for any investor, they're especially useful to investors who lack the time or interest to oversee their investment portfolios.”*¹¹

Such claims give rise to another question: Is it reasonable to believe that a single glide path strategy can deliver the same targeted (as a percent of final salary) inflation-adjusted retirement income for the typical employee regardless of when — age and year — he starts saving for retirement? In attempting to answer this question, fiduciaries must keep in mind that TDF vendors usually assume, when developing their glide path, that participants enroll in their 401(k) plans at age 25, thus generating a 40-year pre-retirement, i.e., accumulation, period.

Mary and John, both 25, illustrate this problem. They were hired by ABC Company at the same time. Mary immediately enrolled in ABC's 401(k) plan and invests all of her contributions into TDF 2020. John delayed enrolling until he was 35. He also invests his entire account in TDF 2020. Over their careers, they are projected to have identical salaries.

It is obvious that if John, who is in the plan for ten years less than Mary, wants his retirement income to be the same as Mary's, his annual contribution is going to have to be much greater than Mary's. After all, if both are to retire at the same time and have the same retirement income, John will need to have the same size retirement nest egg as Mary.

Another TDF, such as TDF 2025 or 2030, may enable John to reduce his annual contribution. However, since these TDFs have a greater allocation to stocks, John will be subjecting himself to significantly more risk, and possibly much greater losses in his account, as he approaches retirement.

This example raises another question: “Is either John or Mary representative of the ‘typical’ employee?” “Neither” is most likely the correct answer. The median age of 401(k) participants is 45. 24% of participants are in their thirties, 25% are in their forties, and 26% are in their fifties. The balance is in the twenties (14%) and sixties (11%). In 2015, the median tenure at the current employer was eight years.¹²

There is also no typical participant contribution rate. In 2016, 18% of participants had a deferral rate of 10% or higher, while 36% had a deferral rate of less than 4%. 23% invested between 6.1% and 9.9% of their pay. Another 23% invested between 4% and 6% of their pay.¹³

This data strongly suggests that most 401(k) plans probably lack a “typical” participant. If a typical participant can’t be defined, is it realistic to expect fiduciaries to be able to “align” their workforce’s characteristics with those of their TDF’s family’s as the DOL instructs them to do?¹⁴ If such an alignment can’t be made, is it prudent for fiduciaries to tell participants that the asset allocations of the TDFs into which they were defaulted are appropriate for them?

These realities are causing fiduciaries to consider a new product, the hybrid QDIA. The hybrid QDIA integrates a TDF with a managed account (MA). Participants are moved from the TDFs in which they were originally defaulted into MAs when certain triggers — usually account balance and/or age — are met.¹⁵ The change occurs when it appears that a TDF, due to its asset allocation, has become an inefficient tool for helping a participant achieve retirement readiness.

Fiduciaries also have to ask whether or not they should be concerned that a glide path usually incorporates only to a limited extent an investment guru’s prediction of future capital market behavior and the manager’s “ideal” reactions to unanticipated events.¹⁶ Rather, a TDF glide path is primarily an investment manager’s statistical analysis of historical returns (Monte Carlo simulations), biased by his many assumptions and views on risk/return tradeoffs, including:

- the time period to use for creating the probability distributions;
- the choice of normal or non-normal return distributions; and
- the selection of the most appropriate statistical techniques for addressing non-normal distributions, including downside risk (“fat” left tails or negative skewness and leptokurtosis), serial correlation, correlation breakdown (that leads to overestimating the benefits of portfolio diversification during periods of high market volatility), and the choice of a risk quantifier, e.g., standard deviation or Conditional Value at Risk.¹⁷

These differences in assumptions and biases have resulted in:

- a variety of glide path strategic designs;
- TDFs with the same target dates having a variety of asset allocations; and

- a significant dispersion of returns for TDFs targeting the same date.

Perhaps these realities made a significant contribution to Morningstar concluding:

*“Target-date funds haven’t been around long enough to be able to say whether they will successfully take investors through a full 40-plus-year investment time horizon”.*¹⁸

These realities may have prompted Morningstar to compare the performances of TDFs to that of another QDIA, balanced funds (BFs) (60% equities, 40% fixed income):

*“The results were sometimes surprising. Balanced funds have easily won the day from a total return and risk-adjusted return perspective, as they have generally delivered better annualized returns with lower volatility to boot compared with most target-date category averages. However, the typically steady flow of savings that comes from investors saving through workplace retirement plans would have resulted in higher ending balances for many investors using target-date funds compared with balanced funds.”*¹⁹

QMA’s Jeremy Stempien is even more blunt when it comes to putting much credence in the probabilities of success (POS) claimed by TDF vendors for their glide paths:

*“The ability to achieve a desired retirement income is commonly measured as the probability of running out of money by a given age... It is not uncommon for target date providers to claim probabilities of success on par with perfection for their particular target date series... a broader understanding of success probabilities suggests a more nuanced picture. How exactly is the POS measured? What assumptions about participant behavior are implicit in these claims? And most importantly, how must the respective asset classes behave in order for target date funds to fulfill their potential?”*²⁰

Fiduciaries should not underestimate the importance of Morningstar’s and Stempien’s concerns. In their 2007 paper, Ameriks and his colleagues at Vanguard concluded that if the typical participant earned a “constant and certain” real (inflation-adjusted) rate of return of 5% (assuming about a 10% contribution rate and an 80% replacement ratio), he should be able to achieve a “successful” retirement.²¹

Earning a 5% “constant and certain” real rate may not be realistic over the foreseeable future:

*“[Vanguard’s] expected return outlook for U.S. equities over the next decade is centered in the 3%-5% range, in stark contrast to the 10% annualized [nominal] return generated over the last 30 years [January 1987 — December 2016].”*²²

Vanguard’s ten-year projection for the annualized nominal returns for U.S. bonds is only in the 2% — 3% range.²³ Given these projections, 401(k) fiduciaries could reasonably and easily conclude that over the next ten years, not one of Vanguard’s TDFs has a high probability of earning a “constant and certain” real rate of return of 5% or more. In other words, history may be a poor predictor of future market performance if the capital markets are entering a “new normal”.

Vanguard is not the only TDF vendor that predicts much lower capital market returns in the future. JP Morgan, in its *2018 Long-Term Capital Market Assumptions*, predicts that the returns of large and small cap stocks will be 5.50% and 5.75%, respectively. Intermediate-term treasuries and US investment grade corporates will earn 3.00% and 3.50%, respectively.²⁴

In its chart, *Retirement Savings Checkpoints*, J.P. Morgan assumes pre- and post-retirement investment returns of 6% and 5%, respectively.²⁵ The investor is assumed to have an annual gross savings rate of 10%. J.P. Morgan's TDFs, like Vanguard's, may well create disappointments for both participants and fiduciaries.

Given these current long-term capital market assumptions, it is important for fiduciaries to analyze how their TDFs (had they and their 401(k) plans existed) would have behaved in the past. This analysis will help fiduciaries understand:

- the extent to which the returns for the same stock/bond ratios can vary;
- how the same glide path can generate dramatically different account values for participants of the same age who enrolled in their 401(k) plan at different times; and
- why the TDF vendors felt they could justify their claims that their TDFs could deliver the desired results.

To perform such an analysis, seven hypothetical participants were created. These participants are identical except for the year in which they enrolled in their employer's 401(k) plan. Participant A enrolled in 1970 and selected TDF 2010. Participant B enrolled in 1975 and invested his \$5,000 in TDF 2015. The other participants enrolled at five-year intervals. The last participant, G, enrolled in 2000 and his contribution went into TDF 2040.

Each participant is assumed to:

- enroll in the 401(k) plan at age 25;
- retire at age 67;
- have a starting salary of \$50,000 that increases annually by 2%; and
- have a total (employee and employer) contribution rate of 10% of his or her annual salary.

Now the fiduciaries must select a glide path, presumably their TDF family's. The one used in this example is modeled after Blackrock's and consists of two asset classes: stocks and bonds. The stock and bond components are represented by the S&P 500 and the Bloomberg Barclay's US Aggregate (except between 1970 and 1975 when 10-year Treasury bonds are used), respectively.

The glide path's stock/bond transition is shown in Table I. Each asset allocation is held for a five-year period. Tables II through IV summarize the glide path's theoretical behavior during different time periods.

Table II shows the growth of the participants' accounts in the different TDFs. These accumulations were calculated using the two asset classes' historical annual returns.²⁶

Table II clearly demonstrates that the year in which participants enrolled in the 401(k) plan, rather than their behavior, was the primary factor in determining the size of their 401(k) nest-eggs.

Tables III and IV provide further insights into how different market conditions affected the rate of growth of the participants' accounts. For example (Table III), between ages 25 and 42, Participant C's TDF 2020 had an average annual or mean return for the years 1980-1997 that was 17.65%. This return was almost 2.5 times that of Participant G's return of 7.21% (TDF 2040).

Table III also illustrates the sequence of return risk. For that same age band (ages 25 to 42), the average annual return of Participant F's TDF 2035 (9.35%) was greater than that of Participant G's TDF 2040 (7.21%). However, one dollar invested in TDF 2040 at the end of year 2000 would have grown at a compound annual rate of 6.20% over the following seventeen years. One dollar invested at the end of 1995 in TDF 2035 would have had a compound annual rate through 2012 of only 5.94%.

The sequence risk also produced a significant difference in the account values of TDFs 2040 and 2035. After seventeen years, TDF 2040's account value grew to \$249,689 while TDF 2035's account was worth only \$161,272.

Table IV summarizes the number of years in which negative returns occurred and the magnitude of those losses by age band for the different TDFs. This table illustrates just how unpredictable and draconian the losses that TDFs can incur can be, e.g., those that occurred during the dot-com bust (2000-2002) and the Economic Crisis of 2008.

Tables II through IV clearly demonstrate that benchmarking TDF performance is no easy task thanks to the unpredictable nature of the capital markets. These tables suggest why TDF vendors seldom, if ever, provide fiduciaries with the minimum compound growth rates, derived from their Monte Carlo simulations, for various age ranges, e.g., from ages 40 to 45, for each of their TDFs. The vendors probably worry that:

- These minimum compound rates might be significantly greater than the ones participants have had and may experience in the future, as suggested by current long-term capital market forecasts.
- The average 401(k) investor may believe that the minimum compound growth rates are guaranteed and don't understand that rates will materialize only if future market conditions closely resemble those that were incorporated into the Monte Carlo simulations.

Concerns, like the above two, explain why Vanguard recommends benchmarking return expectations in terms of probability distributions.²⁷

JP Morgan, in their 2018 edition of *Guide to Retirement*, reminds investors:

“Given the complex risk/reward tradeoffs involved, we advise clients to rely on judgment as well as quantitative optimization approaches in setting strategic allocations.

References to future returns for either asset allocation strategies or asset classes are not promises or even estimates of actual returns a client portfolio may achieve.”²⁸

The above discussion has identified many of the major issues that must be overcome if fiduciaries want to use a TDF family as their QDIA, including:

- Can the fiduciaries define an “average” employee for their company? After all, so much of the appropriateness of a glide path depends on the similarity between the behavior of the “average” employee and the hypothetical one used in the Monte Carlo simulations.
- Do the fiduciaries have an appropriate benchmark, or can they develop one, for monitoring their TDF family’s performance? Can that benchmark be easily modified as circumstances warrant?
- How should the value proposition and use of TDFs, including the need for participants to assess their own progress towards retirement readiness, be communicated to participants? Since most participants are probably financially unsophisticated, can’t a strong argument be made that fiduciaries have a duty to guide, i.e., advise, their participants as to how to monitor their progress towards a financially secure and comfortable retirement? After all, as the winner of the 2017 Nobel Prize in Economic Sciences, Richard Thaler, has pointed out:

“For many people, being asked to solve their own retirement savings problems is like being asked to build their own cars.”²⁹

- What tools should the TDF vendor provide participants, and how should fiduciaries evaluate those tools? For example, fiduciaries should assess whether or not:
 - the vendor’s retirement calculator has algorithms built into it that can handle how a TDF’s asset allocation, and thus its annual rate of return, changes over time; and
 - updates of projected returns for the capital markets are incorporated into the retirement calculators rather than the participants having to input them.

Tools also include worksheets. To help participants assess their own retirement readiness when they use a single TDF for their entire 401(k) account, Fidelity created the “*Building your retirement*” worksheet. This worksheet is appropriate for participants earning between \$50,000 and \$300,000 and shows them how much money, as a multiple of their current salary, they should have accumulated at different ages in order to have a financially secure retirement. At retirement, the 401(k) nest egg should approximate 10 times their final salary.

“The 10x savings rules of thumb are developed assuming age-based asset allocations consistent with the equity glide path of a typical target date retirement fund, a 15% savings rate, a 1.5% constant real wage growth, a retirement age of 67 and a planning age through 93. The replacement annual income target is defined as 45% of pre-retirement annual income and assumes no pension income...Fidelity developed the salary multipliers through multiple market simulations based on historical market data, assuming poor market conditions to support a 90% confidence level of success.”³⁰

Other TDF vendors, such as JP Morgan³¹, have developed comparable worksheets for helping clients to assess whether or not they are on-track to achieve a financially secure retirement. Unfortunately, if participants learn that they aren't on target, these worksheets don't help participants determine the extent to which their contribution rates should be increased.

Before selecting a TDF family as their QDIA, fiduciaries must document that they have both critically evaluated the above issues and know how to address them. This critical evaluation should include at the minimum:

- a description of the process the fiduciaries used to define their company's "average" employee and an explanation as to why they feel that one hypothetical employee can provide a realistic picture of their workforce;
- a statement as to their TDF family's purpose: accumulation of an adequate retirement nest egg or the generator of retirement income or both (this paper focuses on the role of TDFs as an accumulation vehicle);
- an understanding of how the glide path — both the stock/bond transition and the assets and asset sub-classes utilized — has changed since the TDF family's inception date and the rationale for the changes, e.g., reducing downside risk and/or improving alpha (upside potential and/or stabilizing/enhancing the flow of retirement income);
- an assessment of the vendor's explanation for its TDFs' performances during the 2008 Economic Crisis and how "rude awakenings", if any, were addressed;
- assessing whether or not the participant communications clearly explain that since 401(k) accounts, along with Social Security, will most likely provide the bulk, if not all, of the retirement income for the majority of participants, 401(k) accounts must be managed as mini-defined benefit pensions and not as "run of the mill" savings accounts;
- determining whether or not the TDF vendor is providing fiduciaries and participants with all the assumptions on which the glide path (and thus its POS) is based and the minimum annual compound rates of returns by five-year age bands (starting at age 25) that are required for the glide path to achieve its POS;
- an evaluation of both the recordkeeper's and TDF vendor's calculators to find out:
 - whether the calculators automatically adjust for how the TDFs' asset allocation changes over time or if the calculator assumes a constant allocation, thus requiring the participant to manually revise his TDF's allocation as it changes;
 - whether a TDF's projected rate of return changes automatically as its allocation changes and/or changes in the capital markets occur or if the participant must manually input a new rate of return;
 - how easy would it be for participants to perform these tasks if changes in rates of return and allocation must be inputted manually;

- if participants must make these changes, do either the recordkeeper or TDF vendor provide them with its latest forecast for growth rates for the TDFs and/or the various asset classes or do the participants have to come up with these rates on their own and if it's the latter, is it reasonable to expect them to do so given the fact that investment professionals often have forecasts that vary widely;

(For example, in its 2017 capital market survey of 35 advisors, including Blackrock, JP Morgan, Callan and Aon Hewitt, Horizons Actuarial Services found that for large cap US stocks, the average expected geometric mean return and the average standard deviation were 6.5% and 16.6%, respectively.³² The average standard deviation should make fiduciaries recall the words of John Kenneth Galbraith:

*“The only function of economic forecasting is to make astrology look respectable.”*³³)

- whether the values of the assumptions used in the Monte Carlo simulations, e.g., salary growth rates, inflation rates, retirement age, and age of death, were incorporated into the calculators and how easy would it be for participants to change them to more realistically reflect their situations;
- whether participants have the ability to input other relevant retirement related data into the calculator, e.g., non-401(k) assets that could provide income, income from part-time work in retirement, and special needs or goals like unanticipated medical costs or a “once in a lifetime” trip?

If fiduciaries are not comfortable with what they have learned as well as how they have been and/or will likely be addressing the above issues, they should consider a hybrid QDIA, balanced fund (BF), or a managed account (MA) as their QDIA. Fiduciaries should not rely on the fact that to date, there have been no lawsuits over the performance of TDFs. After all, as more and more Baby Boomers approach retirement age and then discover that a financially secure retirement is merely a pipe dream, the odds are that increasing numbers of lawsuits alleging breaches of fiduciary duties will occur. Fiduciaries must also recognize that if TDF litigation occurs, it is highly unlikely that their TDF vendor will be, or even try to be, their “knight in shining armor”.

When considering replacing TDFs, fiduciaries must recognize that no QDIA is the perfect solution for all employees. They should also factor in and address the reality that the typical worker is not financially sophisticated:

“A recent survey by financial services company Financial Engines found that over 47 percent of Americans feel more secure about their finances today than they did five years ago.

*But feelings aren't the same as facts. When Financial Engines gave the same survey respondents an 11-question financial literacy quiz, only 6 percent passed.”*³⁴

To make matters worse, a recent Board of Governors of the Federal Reserve System report found:

“Three-fifths of non-retirees with self-directed retirement savings accounts, such as a 401(k) or IRA, have little or no comfort in managing their investments.”³⁵

Fiduciaries and plan sponsors should also recognize the extent to which their workers are afflicted with financial stress and how this stress affects productivity.³⁶ The same Prudential survey also found that almost 60% of employees say they are more productive when their employers demonstrate a commitment to their financial wellness, including offering free retirement planning. This should not be surprising since the survey found that 72% of American workers are concerned over their retirement security, and 65% wish they had a clearer idea of how much they should be saving for retirement. In fact,

“76% of workers support requiring retirement plans to provide participants annual estimates of their income in retirement.”³⁷

Given the low level of financial literacy among 401(k) participants, a strong argument can be made that providing a robust financial education program is a fiduciary duty. After all, without basic financial knowledge, participants will be unable to determine whether the QDIA into which they have been defaulted is appropriate for them.

Financial illiteracy also encourages inertia regarding saving and planning for a successful retirement. In addition, to help overcome this inertia, the plan sponsor may want to auto-enroll new employees into the 401(k) plan and institute a contribution auto-escalation program.

A good financial education program could be a wake-up call for many employees. In any event, it is a fiduciary duty to critically evaluate:

- the adequacy of their recordkeeper’s and or/consultant’s current education programs,
- whether the programs are addressing the needs of the participants, and
- the extent to which they have affected participant behavior.

The fiduciaries’ next step is to select the QDIA. If the fiduciaries feel that their employees would benefit from, perhaps even need, personal advice, they should consider a MA program.³⁸ Morningstar, in a recent webinar, reported that 87% of participants using its program increased their savings rates by nearly 28%, an average of 2% of their salary.

Morningstar also believes that:

“A 25-year-old participant could have almost 40% more retirement income from an advice and managed accounts service with an annual fee of 0.40%. Also, there is an 89% chance that a 25-year-old using the program will have greater retirement wealth [than an average 25-year-old that did not use a managed accounts service].”³⁹

(The annual fees are set by the recordkeeper and/or the consultants and usually range from 40 to 60 bps.)

If the fiduciaries feel that the MA fee cannot be justified even though one-on-one counseling may be provided, they should seriously consider a BF. The appeal of BFs is that not only are they easy to understand, but available calculators usually allow participants to model various scenarios and modify their assumptions as changes in the economy occur. This modeling, along with a robust financial/retirement education program, will help engaged participants to assess whether they wish to remain in the BF, switch to a MA, create their own asset allocations, or even utilize a single TDF for their accounts.

Table V compares the performances of hypothetical TDFs and BFs. Although the TDFs generated larger accumulations, a fiduciary could make a strong argument that the modeling capabilities that accompany BFs more than make-up for the TDFs' slightly larger values.

Selecting a QDIA is not a task that fiduciaries should take lightly. ERISA requires them to act solely in the interests of the plan's participants and beneficiaries (duty of loyalty) and to make decisions in the manner that a prudent expert would.

Prudent decision making requires fiduciaries to establish well-defined processes that address all the issues related to the topics being considered. ERISA recognizes that prudent decision making does not guarantee successful results. After all, highly regarded experts can arrive at dramatically different answers to the same question. Sometimes experts can't even arrive at satisfactory answers. Thus, extensive documentation is required for fiduciaries to demonstrate the thoroughness of their decision-making process.

In conclusion, fiduciaries should not feel that selecting a TDF family as their plan's QDIA is a "no-brainer" because most other plans are using them. If litigation were to occur, relying on the argument that TDFs are by far the most popular QDIA will most likely not satisfy the DOL or the courts given all the issues discussed in this paper.

The author wishes to acknowledge the helpful discussions he had with John Ferreira of Morgan, Lewis & Bockius LLP.

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- ³⁸ For a concise comparison of TDFs and MAs, see Joanne Sammer, *Do 401(k) Managed Accounts Live Up to All the Hype?*, Aug 11, 2017, www.shrm.org/resourcesandtools/hr-topics/benefits/pages/401k-managed-accounts.aspx.
- ³⁹ Morningstar, *Selecting the Optimal QDIA –Where Do Managed Accounts Fit*, May 10, 2018, pp.16-20.