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Border Security
An Assessment of the Metrics

by Igor C. Magalhaes

Executive Summary

Through the years, policymakers have implemented numerous metrics to quantify border security. Many of them provide essential data and have been maintained relatively constant, but others have had their methodologies modified or were simply discarded over time due to the challenges associated with gathering such information. Still today, even as they have improved, these metrics are not perfect. As a whole, they largely fail to properly account for certain crucial aspects of immigration enforcement capabilities and changing migration patterns. Additionally, some incorporate faulty methodologies or utilize assumptions that do not reflect reality.

However, highlighting the deficiencies of these metrics is not to imply that they are meaningless. Far from it. Without them decisions on how to secure the border would be made arbitrarily. It is simply intended to demonstrate that they should be improved moving forward. Much can be done to make them better.

- **Report every metric monthly, or at the very least quarterly.** This would allow for policymakers to better respond to developments on the ground, for elected officials and the American people to have greater oversight, and for non-government entities to conduct better studies and provide innovative insight.

- **Incorporate asylum seekers into measurements of border security.** This would result in data that better reflects the true composition of the current border crossing community. The border crisis is for the most part due to the influx of migrants actively looking for Border Patrol officers after unlawful entry so they can claim asylum. Without accounting for asylum seekers, the information used during decision-making will continue to be incomplete.

- **Increase research on how non-human capital improves detection and enforcement capabilities.** This would help guide how to best allocate these limited resources among border sectors more effectively.

- **Expand surveys beyond Mexican nationals and implement practices that limit untruthful answers.** This would make the information they gather better represent the characteristics of the migrants who come to the American border and make their results more reliable.

- **Institute administrative practices that continually check the proficiency of the data collection infrastructure.** This would ensure that detection methods utilized at the border are actually capturing what they intend to.

Elected officials and government agencies should continue to strive to get the most complete information possible so they can take proper action to secure the southern border. Quantitatively evaluating the extent and character of migration flows and the ability of immigration enforcement agencies to enforce
immigration laws will aid in minimizing illegal entry, preserving American sovereignty, and maintaining national security.

**Developments of Border Security Metrics**

Being able to quantify what a secure border looks like is essential for maintaining the sovereignty and national security of the United States. In order to make informed decisions on the performance of immigration enforcement agencies, elected officials need metrics that clearly identify what a secure border means. Such metrics will also help the American people hold their government accountable for carrying out one of its core responsibilities—protecting the nation's borders. However, adopting long-standing metrics that properly measure the most consequential aspects of border security has proven problematic. While spending on immigration enforcement has increased dramatically, metrics to quantify and evaluate improved border security abilities have lagged.

Historically, apprehension totals have been the primary source of information on border security between ports of entry (DHS 2019a, 6). This metric indicates how many unlawful entry attempts are intercepted and perpetrators put into custody. It provides data necessary to understand the state of the border, but unfortunately, it also possesses numerous limitations. Accordingly, other metrics were devised to fill the gaps, even though apprehension data is still critical to this day.

Calls for more comprehensive indicators of immigration enforcement surfaced in the 1990s. This push was sparked by the failure of the Immigration Reform and Control Act of 1986—which combined amnesty for millions of undocumented aliens with a substantial increase in immigration enforcement—to limit the flow of illegal immigration to the United States (Argueta 2016a, 1). New metrics were instituted following recommendations by the Government Accounting Office (later renamed the Government Accountability Office) and legislation passed by Congress aimed at increasing oversight over government agencies. In 1997, for example, the recidivism rate—the number of repeat illegal border crossers apprehended in a year—was first developed, adding another set of data to be used during decision-making (Roberts, 11).

At the beginning of the 21st century, the American immigration system changed dramatically. Following the 9/11 attacks and the passage of the Homeland Security Act of 2002, the Immigration and Naturalization Service (INS) was abolished and replaced by the new Department of Homeland Security (DHS), which assumed the responsibilities of enforcing immigration laws. In its early years, the DHS inherited the use of “optimum deterrence” developed by the INS at the turn of the century as their primary tool to measure border security. Optimal deterrence was defined as “the level at which applying more Border Patrol agents and resources would not yield a significant gain in arrest/deterrence” at “high priority entry corridors” (DOJ). The metric primarily considered apprehensions but also included recidivism, increased in smuggling fees, the shift in illegal activity location, and additional circumstances to measure optimal deterrence. The goal of taking all these diverse conditions into account was to have a single comprehensive measure of border security. Unfortunately, it was difficult to quantify such a combination, and optimal deterrence only lasted as a metric from 2001 to 2004 (Argueta 2016b, 10).

It was then replaced in 2005 with “operational control,” a mile by mile assessment of “the ability to detect, respond to, and interdict border penetrations in areas deemed as high priority for threat potential or other national security objectives” (Roberts, 11). Operational control was defined in the Secure Fence Act of 2006 as “the prevention of all unlawful entries into the United States, including entries by terrorists, other unlawful aliens, instruments of terrorism, narcotics, and other contraband.” At the beginning of 2010, 57 percent of the southwest border was considered to be under operational control (Argueta 2016b, 10). However, operational control was mostly subjective and acted more as a qualitative measure when evaluating the use of human and non-human assets to secure the border. Once the Government Accountability Office and other organizations demonstrated its defects, operational control suffered the same fate as optimal deterrence and was retired in 2010 (DHS Office of Immigration Statistics, 18).

While developing a comprehensive new metric to replace operational control—the border conditions index (BCI), DHS relied on apprehension totals as its primary method of defining border security. BCI attempted to combine information on developments not only between ports of entry but also at ports of entry and in border communities. These included measurements of things such as quality of life and public safety at border towns and wait times at ports of entry. However, the difficulty in combining these distinct circumstances resulted in BCI being discarded by 2013, and its results were never made public (Argueta 2016b, 3). Once again, an ambitious effort was scrapped for impracticality.

After repeatedly failing to establish an all-encompassing metric, DHS now relies on narrower data that is easier to calculate accurately. DHS began to use the recidivism rate and the interdiction effectiveness rate (IER) as its primary tools for measuring and understanding border security. While both metrics have numerous flaws, they have been
continuous improved since their inception and provide vital information on the state of the border (Roberts, 11).

This brief overview of the recent developments of border security metrics attempts to show how volatile the effort to measure the performance of immigration enforcement has been. Quantifying information on the state of the border is hard. Efforts to create all-encompassing metrics, such as BCI, have failed. While some simpler metrics are in place and provide necessary information on the state of border security, they also have limitations.

Limitations of Border Security Metrics
Evaluating immigration enforcement is not an easy task. The southern border is 1,993 miles long. Given its size, it is a massive undertaking to monitor it properly. The different terrains and climate that it encompasses make it even more challenging for immigration enforcement agencies to carry out their responsibilities (Provost, 2).

Additionally, due to the clandestine nature of illegal immigration, procedures put in place to determine the number of foreign nationals who evade apprehension or detection are imperfect. In other words, some individuals are able to successfully enter the country illegally between ports of entry and remain unaccounted for. The bulk of enforcement capabilities are concentrated in areas of the border that are known for substantial illegal flows—especially in urban centers. Since resources and funding are scarce, such concentration is reasonable, but it leads to some of the more isolated parts of the border to be undermanned and under-supervised. These gaps provide avenues for migrants to enter the country undetected. Nevertheless, with increasingly sophisticated methods of evasion, some individuals can do so even at its most guarded points (Rosenblum and Hipsman, 11). Therefore, numbers used to evaluate border security will not be exact regardless of technological advancements or the allocation of more resources to the border.

However, problems with developing helpful guidance for improving immigration enforcement are not only due to discrepancies in the data caused by those who evade detection and apprehension. The current crisis at the border has been predominantly driven by those who purposely seek out Border Patrol so they can request asylum. These asylum claims have not been incorporated into the network of border security metrics.

The American immigration enforcement apparatus at the southern border was designed to primarily manage single Mexican adults who crossed the border attempting to evade Border Patrol. Historically, they have comprised the majority of border crossers. Once apprehended, they were quickly processed and returned to Mexico without extended stay in federal custody or lengthy legal proceedings. This is no longer the case.

Most migrants now making their way to the United States’ border are family units and unaccompanied alien children (UACs) from Central America—especially Guatemala, El Salvador, and Honduras—who actively look for Border Patrol so they can claim asylum (Arthur). While the majority will be denied asylum—since asylum is reserved for those fleeing persecution in their country of origin not for economic opportunity or family reunification—the backlog in immigration court makes the full adjudication of cases take years (TRAC 2018). The backlog is now over one million cases, with an average wait period of 696 days per case (TRAC 2019). In the meantime, many of these asylum seekers are free to reside in the United States and may even get work authorization. Therefore, immigrants are encouraged to seek asylum, even if they are not fleeing persecution, instead of using other legal avenues or attempting to evade immigration enforcement, because asylum is now seen as the easiest method to come live and work in the United States.

Because asylum is now seen as the easiest method to come live and work in the United States, migrants are encouraged to seek asylum, even if they are not fleeing persecution.

In other words, loopholes in the American asylum system, which are advertised by smuggling networks in Mexico and Central America, are driving people to come to the United States’ border. Experts understand that the asylum system is being abused but have not yet incorporated asylum measurements into the border security metrics’ framework. Without accounting for this critical measurement quantitatively when addressing border security, immigration enforcement agencies and elected officials are ignoring perhaps the largest cause of the crisis.

Another limitation is that border security metrics are not based on objective and observable data alone. Immigration officers and research organizations on both sides of the
Border conduct surveys of migrants who have attempted or intend to enter the United States illegally. These surveys provide much of the information used in border security metrics. They remain valuable because they can directly assemble data that cannot be collected by other means and be compared to and used in conjunction with other metrics. For example, the recidivism rate established by Border Patrol using biometric data of people apprehended at the border can be compared to the percentage of deported Mexicans who indicated in surveys their intention to try reentry.

However, using surveys is problematic for numerous reasons. First, they lack data on those who have successfully entered the United States between ports of entry and reside here illegally. Without such information, steps taken based on these surveys will be limited in their usefulness to address deficiencies at the border (Morral et al., 8). Second, given the taboo nature of questions regarding illegal immigration, responses may not be answered truthfully. Requiring individuals to willingly confess to breaking the law, even under the guise of anonymity, is challenging since they may feel vulnerable to punishment. Third, many of these surveys are based only on responses by adult Mexican nationals from particular communities. This approach was acceptable when the vast majority of migrants were adults from specific parts of Mexico, but with the rise of migration from Central America, especially of family units and UACs, the sample taken from such surveys may not be representative of the experiences of the majority of migrants (Rosenblum and Hipsman, 9).

Furthermore, since Mexican nationals are the population of interest, many of the studies used to gather information on them are performed by Mexican universities and government agencies (National Research Council, 61-73). This prevents DHS from having oversight of the performance of these surveys and requires relying on the administrative practices of a foreign government. Lastly, conducting studies of large samples with the desired niche characteristics is time-consuming, making some surveys insufficient to advise rapid action (Rosenblum and Hipsman, 9).

Alongside surveys, techniques aimed at estimating undetected flow were designed to gather additional information. A Repeated Trials Model (RTM), also known as capture-recaptured, is the primary way that DHS estimates total illegal entry into the United States by using it to calculate a partial apprehension rate (PAR). While a sound statistical tool, when applied to estimate unlawful entry, it relies on several faulty assumptions. These assumptions, in turn, lead DHS to acquire a PAR that is based on a sample that does not represent the composition or migration patterns of the majority of illegal crossers. DHS then applies this flawed PAR to most border crossers, regardless of their initial distance to the border or number of previous attempts. Greater details on this methodology will be provided later on in the paper.

A bigger issue with border security metrics, however, is that one must be careful when assigning the causes of their changes. While changes to American policy can produce differences in the numbers, factors outside the control of the American government also guide migration patterns. For example, in 2019, there was a significant decrease in the number of apprehensions at the southern border from May to June. Many people attribute this decrease to the deal that President Trump made with the Mexican government, by which the United States would not impose tariffs on Mexican products as long as their government enhanced and fulfilled their immigration-related obligations (Miroff). But even though the deal has affected the number of migrants who make it to the southern border of the United States, historically, there has been a decrease in the number of migrants coming north at the beginning of summer (CBP 2019a).

Since the turn of the century, numerous metrics on immigration enforcement used by federal agencies to quantify border activity have been repeatedly adopted, adapted, and improved to overcome these limitations; some metrics have been discontinued. Although such changes may have increased the quality of the data gathered, they can also be problematic. Without some continuity, evaluating the progression of border security is unreliable.

It is commonly understood that expecting perfect surveillance and 100 percent enforcement at the border is unrealistic. Nevertheless, having the most accurate information possible will aid in deciding how to make the border more secure. While imperfect, border security metrics are important guides to such decision-making.

**Metric Categories**

To suitably evaluate immigration enforcement, one must recognize the different categories of border security metrics. There are four main categories: inputs, activities, outputs, and outcomes.

**Input metrics** encompass resources allocated to border security. These include things such as the number of agents on duty or the miles of physical barriers in place. **Activity metrics** quantify explicit actions aimed at securing the border. An example of an activity metric is the number of migrants apprehended attempting to enter the country between ports of entry (DHS 2019a, 5). These metrics are trackable and useful for strategic planning. However, they only provide limited information on the security of the border.
Output measures are calculated based on the results of the activities taken to secure the border. These include apprehension and recidivism rates. Outcome metrics are more elusive because they attempt to capture the impact of border security practices. An example of an outcome metric is the number of illegal migrants who infiltrate the country successfully (DHS 2019a, 5). These metrics provide more insight into the state of the border than inputs and activities but are also harder to measure with reliability since Border Patrol cannot detect all illegal flow and must rely on estimates.

These categories work in tandem and are crucial to understanding border security. However, this paper primarily focuses on activities, outputs, and outcome measures.

Border Security Metrics

Apprehension Totals

The total number of apprehensions of illegal border crossers between ports of entry is an activity measure and has been the metric most often used to evaluate the security of the border (DHS 2019a, 21). It has been used to estimate total illegal flow between ports of entry and to guide decisions at the border for decades. Still today, apprehension totals are used as talking points to address the state of the border. This is for a good reason. One can use it to estimate the scope and character of the flow of migrants to determine the best course of action.

Since apprehension totals are calculated and made public every month, it is a metric that can be used to justify rapid action. For example, four of the first six months in 2019 had apprehension totals of over 100,000 (CBP 2019b). As a result, the president and some members of Congress have attempted to increase funding and resources available for immigration enforcement agencies so they can properly carry out their responsibilities (Caldwell et al.).

Apprehension totals can also be beneficial when broken down by citizenship (DHS 2019a, 59). Knowing the nationality of those apprehended trying to illegally enter the United States can guide diplomatic efforts to get cooperation from foreign governments. For example, with the massive increase of apprehensions of people from the Northern Triangle, the Trump administration has taken measures so that their countries’ leaders would do more to help. The president agreed to asylum cooperation agreements with the governments of Guatemala, Honduras, and El Salvador, where asylum seekers would not be able to receive protection in the United States if they passed through those countries and did not apply for asylum there first (Alvarez and Sands).

In short, the total number of individuals apprehended is a simple metric that can be easily used during deliberations. However, just knowing the number of persons caught during illegal entry attempts does not provide a holistic assessment of border security.

The biggest flaw of only relying on apprehension totals is that it does not account for those who evade apprehension or detection. There is an unknown number of people who are successfully infiltrating the country. Consequently, apprehension totals do not indicate how efficient Border Patrol is in intercepting illegal entry.

Apprehension totals also do not take into consideration a major component of border security—deterrence (Argueta 2016b, 11). While the threat of apprehension may deter some from attempting illegal entry, only considering apprehensions does not indicate if the United States has the necessary capabilities of turning back individuals at the border. Impeding them from coming into the country in the first place prevents the government from having to dedicate resources to process, house, and relocate them. Likewise, by solely looking at apprehension totals, one ignores the fact that many illegal border crossers are repeat offenders. Without encompassing re-apprehensions, it is not possible to conclude if border capabilities and enforcement consequences are preventing people from making subsequent attempts (Argueta 2016a, 20).

An increase or decrease in total apprehension does not even provide a clear-cut look into border security because both high and low totals can be taken as improving or deteriorating border security. For example, an increase in apprehensions may come from enhanced border security capabilities or a limited capacity to prevent illegal entries in the first place. On the other hand, a decrease in apprehensions may signify improved deterrence capabilities or that few who attempt unlawful entry are detected and apprehended (Morral et al., 1).

On top of that, an increase or decrease in apprehension totals may not even be primarily due to actions taken by the
government to improve border security. For example, the decline in apprehensions at the southwest border toward the end of the first decade of the 21st century was largely driven by worsening economic conditions in the United States (Argueta 2016a, 18).

In conclusion, while apprehension totals are useful, they are not by themselves enough to have a proper understanding of border security. However, apprehension totals are used in combination with other metrics to provide more detailed information.

**Apprehension Rate**

\[
\text{Apprehension Rate} = \frac{\text{Number Of Apprehensions}}{\text{Number Of Unlawful Entry Attempts}}
\]

In its most basic form, the apprehension rate is an output measure calculated by dividing the number of apprehensions by the number of unlawful entry attempts (DHS 2019a, 21). It is superior to apprehension totals because it includes the reality that Border Patrol is unable to apprehend all of those who attempt illegal entry.

Even though the apprehension rate is an essential metric of border security, namely the percentage of those who are detained trying to enter the country illegally, it also has considerable shortcomings. One shortcoming is that it does not measure the ability to turn back those attempting illegal entry at the border (DHS 2019a, 7). Therefore, apprehension data is only one part of the puzzle since it does not consider those who give up a crossing attempt due to physical barriers, the presence of Border Patrol agents, or any other factors.

DHS uses two distinct methodologies to calculate apprehension rates: observational and model-based.

**Observational Apprehension Rate**

\[
\text{Observational Apprehension Rate} = \frac{\text{Apprehensions}}{\text{Apprehensions} + \text{Got Aways}}
\]

The observational apprehension rate is based on apprehension totals and direct and indirect observations of got aways. “Got aways” are persons who were directly or indirectly detected successfully entering the country illegally without being deterred or apprehended at or around the border within 30 days of entering the United States (DHS 2019a, 9).

As expected, the primary problem of using the observational apprehension rate is that it does not account for undetected successful illegal entries. This leads to the inflation of the apprehension rate, which can make the security of the border appear greater than it actually is. Other deficiencies of the got aways measure will be highlighted later in the paper.

Nevertheless, basing calculations on observations has its merits. These metrics do not require estimations that are sometimes based on unreliable assumptions. With the increased use of technology, DHS is now able to monitor a larger share of the border reliably. Additionally, with more uniform border-wide standards to identify got aways since 2014, the difference between the estimated total successful unlawful entries and got aways has significantly decreased (DHS 2019a, 17).

**Model-based Apprehension Rate**

\[
\text{Model-Based Apprehension Rate} = \frac{(\text{Attempts}_{\text{Impactable}} \times \text{PAR}) + (\text{Attempts}_{\text{Non-Impactable}} \times 100\%)}{(\text{Attempts}_{\text{Impactable}} + \text{Attempts}_{\text{Non-Impactable}})}
\]

The model-based apprehension rate is a way to overcome the challenge of accounting for undetected border crossers and those who are deterred from making subsequent attempts to enter the United States. To do this, the metric separates border crossers into two distinct categories—impactable and non-impactable. It then uses a Repeated Trails Model (RTM) methodology, devised by the Institute for Defense Analysis (IDA), to estimate the partial apprehension rate for impactable migrants (DHS 2019a, 64).

Non-impactable border crossers include unaccompanied alien children, family units, and asylum seekers. These migrants are usually allowed to stay in the United States while they wait for the adjudication of their cases. Therefore, DHS assumes that all non-impactable border crossers turn themselves in to the authorities after illegally entering the country (DHS 2019a, 8).

Impactable border crossers, on the other hand, are adults not claiming asylum who are generally subject to enforcement consequences, the process imposed on migrants who are apprehended, ranging from voluntary deportation to criminal prosecution. This group is expected to try to evade detection during an unlawful entry attempt. Therefore, DHS uses the PAR to calculate the likelihood of apprehending them since some will be able to enter the country illegally (DHS 2019a, 7).
The first step in establishing the PAR is getting a subset of illegal border crossers who are likely to attempt a subsequent unlawful crossing. Under the IDA model, this subset only includes Mexican adults who are not claiming asylum since they have historically been the primary demographic for border crossing. (DHS 2019a, 64).

From this subset, some of those who are apprehended and returned to their home country will be deterred from attempting to enter the United States illegally again. The deterrence rate is estimated using the results from Encuesta Sobre Migracion en las Fronteras (EMIF) Norte surveys (DHS 2019a, 65). These surveys are conducted by the El Colegio de la Frontera Norte with a partnership with the Mexican government. They capture information on individuals in northern Mexico who intend to come to the United States indefinitely, and on those who were removed from the United States and sent back to north Mexico (EMIF).

Those who are not deterred (the rest of the subset) are expected to attempt to cross the border again. It is possible to establish who has tried illegal entry multiple times because Border Patrol fingerprints and stores the information of those apprehended. PAR is then determined by dividing the number of individuals in the RTM population who were apprehended attempting subsequent entry into the country by the total number of those who were successful (Bailey et al., 13-15).

By using PAR, DHS recognizes that some will evade apprehension and others will be deterred. By doing this, the goal is to get a more accurate sense of enforcement capabilities at the border. Accordingly, the model-based apprehension rate is, understandably, lower than the observational apprehension rate. For example, in FY 2017, the model-based approach resulted in a border-wide apprehension rate of 65.4 percent, and the observational approach had one of 74.5 percent—showing a substantial gap of almost 10 percent (DHS 2019a, 10).

While the model-based apprehension rate provides a more comprehensive analysis of apprehension capabilities at the border, it relies on several problematic assumptions. First, separating migrants into two distinct groups is unrealistic. By assuming that no asylum seeker, UAC, or family unit—non-impactable border crossers—tries to get into the United States between ports of entry undetected, the model-based apprehension rate is potentially not including a large segment of individuals in its calculations (GAO 2019a, 26).

Second, the use of surveys can lead to improper conclusions. The biggest flaw with the use of surveys for establishing PAR is that they are only conducted on adult Mexican nationals in north Mexico. By only considering Mexicans when determining the apprehension rate, PAR is based on a declining population of border crossers. Therefore, it does not reflect reality (GAO 2019a, 29).

On top of that, the PAR is used on all impactable border crossers, regardless of nationality. However, given that PAR is calculated only from Mexicans, using it for border crossers from other countries can provide faulty information (GAO 2019a, 25). Distance to the border will likely make people from farther places attempt re-entry less often than people from northern Mexico.

Another questionable assumption of PAR is that the likelihood of being caught during successive attempts is the same as for the initial attempt. Again, this does not reflect reality. Migrants are likely to try to enter the United States by other means or locations in consecutive attempts, changing the probability of being apprehended again. Likewise, it also assumes that people will be deterred at the same rate regardless of the number of efforts made (GAO 2019a, 25-26). Someone failing during their sixth entry attempt, for example, is probably more likely to be deterred from trying to do so again than someone failing for the first time.

Given these assumptions, DHS uses the RTM model developed by IDA but acknowledges that it needs to continue to be improved (DHS 2019a, 64). Accordingly, DHS has partnered with the Johns Hopkins University Applied Physics Laboratory to revamp its model-based approach (GAO 2019a, 31).

\[
\text{Recidivism Rate} = \frac{\text{Individuals Apprehended Multiple Times}}{\text{Apprehension Total}}
\]

The recidivism rate is an output measure calculated by dividing the number of individuals apprehended multiple times by the apprehension total. This metric is significant because it shows how many of those apprehended trying to enter the country illegally are repeat offenders (DHS 2019a, 28). Calculating this with a high degree of certainty is possible since Border Patrol collects biometric data of those apprehended—including fingerprints and digital photographs.
The recidivism rate, accordingly, can be seen as measuring the deterrent effect of border security (DHS Office of Immigration Statistics, 9). In principle, if recidivism is high, meaning individuals caught attempting to enter the country illegally are in large part repeat offenders, that can be a sign of poor deterrence capabilities. On the other hand, if recidivism is low, meaning that migrants are unlikely to attempt re-entry, that can be a sign of working deterrent capabilities.

Deterrence is a crucial part of protecting the border because limiting the number of migrants entering the country illegally reduces the need for resources to apprehend, house, and care for them. As seen in the last two years, maintaining a large number of migrants in detention leads to overcrowding (DHS Office of Inspector General), which in turn can lead to the possibility of the spread of diseases, and diverts Border Patrol away from monitoring the border and into humanitarian responsibilities instead.

The recidivism rate of the southern border has consistently decreased since FY 2012. Between FY 2016 and 2017, the recidivism rate fell from 12.27 percent to 10.48 percent—significantly lower than the established goal of 17 percent (DHS 2019b, 16). When broken down by border sector, however, numbers can vary pretty widely. For example, in FY 2017, while the Yuma sector in Arizona had a recidivism rate of only 3.77 percent, the El Centro sector in California had one of 22.73 percent. Of the five sectors in Texas, only Laredo had a double-digit recidivism rate—13.29 percent—in FY 2017, surpassing the southern border national average of 10.48 percent (DHS 2019a, 29). However, it is easier to gain entry in some sectors than in others due to factors outside the government’s control, such as terrain. Therefore, just because two sectors have different recidivism rates does not necessarily mean that one is more secure than the other.

The recidivism rate can be useful when measuring recidivism by consequence. Consequences can be administrative, programmatic, or criminal. Different consequences lead to different recidivism rates, with the more punitive leading to lower rates of recidivism and vice versa. For example, in FY 2017, migrants who were subject to voluntary return tried re-entering the country almost 25 percent of the time, while those who were subject to standard prosecution tried it only around 7 percent of the time. While this information is revealing in how to deter individuals from making subsequent trips to the border, stiffer consequences are usually assigned to repeat offenders. This may cause the recidivism rate to be changed not only due to the consequence imposed, but the likelihood of the recidivist population to try re-entry (DHS 2019a, 30).

Unfortunately, while the recidivism rate provides valuable information on border security, it also possesses many flaws. One flaw is that the recidivism rate does not take into account a migrant’s distance to the border. Therefore, while migrants from places farther away from the border may have a lower recidivism rate than people from Mexico, for example, this will not be portrayed in the rate (Argueta 2016b, 7).

Furthermore, the recidivism rate, like apprehension totals, cannot accurately indicate improved or worsening border security by its low or high values alone. A declining recidivism rate may indicate that once-caught individuals are discouraged from making subsequent attempts to enter the country illegally or that repeat offenders are largely successful in entering the country illegally in subsequent attempts (DHS Office of Immigration Statistics, 9). On the other hand, a high recidivism rate may indicate that Border Patrol is expected to apprehend most of those who repeatedly attempt to enter the country unlawfully or that they are failing to deter individuals from repeatedly attempting illegal entry.

Likewise, attributing a lower recidivism rate to the introduction of more or improved border security methods is problematic. Variables not related to the state of the border can drive a person’s decision on whether or not to attempt re-entry. For example, if the economic situation in some migrants’ home country improves, they may be less inclined to make the journey to the American border again.

Finally, there are two additional problems with the current use of the recidivism rate. First, it only calculates those who have attempted to enter the country multiple times in a fiscal year, not accounting for those who have tried several entries into the country on a broader timeframe. Second, it bases the timeframe of re-apprehension on the date the individual was apprehended instead of the date they were removed. These difficulties were put forward by the Government Accountability Office in 2017. DHS has agreed to make these changes and will report this improved metric going forward in its annual Border Security metrics report (GAO 2017a, 13-17).

**Effectiveness Rate**

The effectiveness rate provides a more complete assessment of border security because it incorporates data on the ability of immigration enforcement agencies not only to apprehend illegal border crossers but also to turn them back (DHS 2019a, 19).

There are two distinct ways to measure the effectiveness rate: the Interdiction Effectiveness Rate and the Unlawful Border Crossing Effectiveness Rate.
Interdiction Effectiveness Rate

\[
\text{IER} = \frac{(\text{Apprehensions} + \text{Turn Backs})}{(\text{Apprehensions} + \text{Turn Backs} + \text{Got Aways})}
\]

The interdiction effectiveness rate (IER) is an output measure calculated by dividing the number of apprehensions plus turn backs by the total number of apprehensions, turn backs, and got aways—the denominator being an outcome measure collectively known as detected unlawful entries. As defined earlier, got aways are persons who were detected successfully entering the country illegally but were not apprehended or deterred. Both measures come from direct and indirect observations. This means that they are not only based on physical surveillance by Border Patrol agents but also include determinations based on foot tracks, sensor activations, or camera views (DHS Office of Immigration Statistics, 4-5).

IER is already in use to measure border security of individual sectors. It can be a way for DHS leadership and elected officials to know which areas of the border are struggling or have reached a satisfactory level of security. For example, in FY 2017, the Big Bend sector in Texas had an effectiveness rate of only 67 percent while Yuma in Arizona had one of 96 percent (DHS 2019a, 19).

The targeted IER average for FY 2017 was 81 percent. However, DHS fell short of this goal by only reaching 78.9 percent—a decrease from the 82.7 percent recorded in FY 2016 (DHS 2019b, 17). Of the five border sectors in Texas, only El Paso surpassed the targeted IER with 91 percent. The others ranged from 67 percent to 80 percent (DHS 2019a, 19). Nevertheless, the dip in IER might be the result of an increase in the detection of got aways and turn arounds—not declining border security (DHS 2019b, 17). Eighty-one percent is the targeted IER moving forward, until at least FY 2022 (DHS 2019c, 69). The lack of increase in their target might be due to DHS’s perception that they will continue to improve their detection of got aways and turn arounds—likely leading to a decrease or leveling of IER even if Border Patrol improves their capacity to apprehend or turn back migrants at the border.

The primary advantage of IER is that it accounts for the ability to turn back illegal border crossers. As previously mentioned, the ability to apprehend illegal border crossers is only one part of border security. The other part is being able to prevent them from crossing in the first place. By doing this, immigration enforcement agencies do not have to perform all of the duties attached to keeping illegal immigrants in custody. In turn, this prevents them from having to spend resources carrying out these responsibilities and allows them to focus on their other duties—such as surveillance.

On the other hand, the primary disadvantage of IER is that it excludes those who successfully entered the country without being directly or indirectly detected—leading to undercounting of got aways and superficially inflating the overall effectiveness rate. Additionally, an early critique of the IER was that there were no definitive guidelines across sectors to differentiate between got aways, turn backs, or other non-related border activity—especially during indirect detections (GAO 2013, 14). However, the methodology has been refined over a decade, and in 2014, uniform standards were implemented at all border sectors (DHS Office of Immigration Statistics, 5). While this calls into question the reliability of IER before 2014, it increases the confidence of the metric going forward.

Still, some critics claim that the way Border Patrol measures turn backs and got aways is subjective and leads to counting. A scenario of such miscounting is of an individual coming to the border, dropping a package containing drugs to be collected by someone else, returning to Mexico, and being identified as a turn back (GAO 2013, 14). Miscounting can also be due to the conditions of the terrain or weather. Rain, for example, may destroy physical evidence or damage sensors and cameras in locations where illegal entries occurred (GAO 2012, 30).

Another problem introduced by critics is coordination. There are thousands of Border Patrol agents responsible for keeping tabs on what is happening at the border. This reality opens up the possibility of flawed accountability of data (GAO 2019a, 47). For example, a migrant might try to enter the country illegally in one sector, be turned back but not apprehended, and try again elsewhere. This may cause the individual to be counted twice by Border Patrol (GAO 2013, 15).

Nevertheless, with the increased usage of technology—such as geospatial intelligence, radars, cameras, and sensors—and their increased accuracy, turn backs
and got aways can be determined more precisely (DHS Office of Immigration Statistics, 5).

**Unlawful Border Crossing Effectiveness Rate**

Unlawful Border Crossing Effectiveness Rate = \[
\frac{\text{Apprehensions + Turn Backs}}{\text{Apprehensions + Turn Backs + Successful Unlawful Entries}}
\]

The unlawful border crossing effectiveness rate is an output measure calculated by dividing apprehensions plus turn backs by the sum of apprehensions, turn backs, and successful unlawful entries. This metric is very similar to IER, but instead of basing the number of persons who successfully enter the country illegally on direct and indirect observations, the unlawful border crossing effectiveness rate uses an estimate to measure successful illegal entries. Therefore, it considers not only the persons who were detected successfully entering the country illegally but also those who were undetected (DHS 2019a, 18-19).

The unlawful border crossing effectiveness rate is a mandated metric under the guidelines of the National Defense Authorization Act for FY 2017. However, it is not currently in use since its methodology to estimate successful entries by sector level has not yet been validated. Accordingly, the interdiction effectiveness rate has been reported in its place (DHS 2019a, 18-19).

There is currently no target figure for the unlawful border crossing effectiveness rate. But since the goal for IER for the near future is 81 percent, a value slightly lower can be expected since the unlawful border crossing effectiveness rate incorporates both detected and undetected events at the border—increasing the denominator compared to IER. However, there should not be a monumental difference between the two since detection has improved and is likely to continue to improve.

**Border Crossing Cost**

Border crossing cost is an output measure that encompasses the share of migrants who hire smugglers and how much smugglers charge for their service. The data shows that an increasing number of people use smugglers to cross the American border. According to DHS, in recent years, between 80 percent and 95 percent of individuals apprehended during an illegal border crossing used a smuggler. While smuggling cost varies, in recent years, DHS reported that initial payment for their service can be as high as $1,200 with an additional $8,000 after the migrant reaches their final destination. While monetary compensation is the most common source of payment for smuggling, other forms have been reported, such as bringing illicit drugs into the United States or working off debt once in the country (DHS 2019a, 62).

Like any business, smuggling follows the realities of the market. Smugglers compete amongst themselves to attract people to their business. To be competitive, they need to have competitive pricing. But as it becomes more difficult to smuggle migrants into the United States, smugglers raise their prices since they must pass the cost of the added risk to the individuals seeking their services. It is predicted, therefore, that as border security capabilities increase, the price of smuggling will follow. Eventually, potential migrants from poorer sectors of the population will likely be unable to afford such service, decreasing the number of migrants heading to the border (DHS 2019a, 61).

There are two downsides of using border crossing cost as a metric of border security. First, interpreting an increase in smuggling costs as a product of enhanced border security capabilities by the United States is problematic. Outside factors, such as demand, for example, can be the driving force behind price increases.

Second, smuggling costs are calculated using surveys of migrants. Given the sensitive nature of the topic, the people interviewed may not answer questions honestly or may not comprise a representative sample.

**Operational Control**

As demonstrated in the “developments” section of this paper, operational control was found to be an unreliable measurement of border security during the first decade of the 21st century. However, the Trump administration has sought to revive it and improve it. Executive Order 13767 on “Border Security and Immigration Enforcement Improvements” issued on January 25, 2017, calls for the reinstitution of operational control (OPCON) as a metric to assess border security. Operational control still uses its previous definition of “the prevention of all unlawful entries...
into the United States, including entries by terrorists, other unlawful aliens, instruments of terrorism, narcotics, and other contraband” (Exec. Order No. 13767).

Operational control will include three conditions in its calculations. First, it will account for “impedance and denial,” which is the capacity of Border Patrol to prevent or interrupt illegal border crossing. Impedance and denial will encompass miles of new or replaced border fencing. Second, it will measure “situational awareness,” the extent that Border Patrol can process information and make strategic decisions. Situational awareness will be measured by the rate at which Border Patrol reaches the site of activity in low-risk areas promptly. Lastly, it will also include “law enforcement resolution,” the ability to respond to developments at the border and adequately apply consequences against those responsible for illegal activity. Law enforcement resolution will incorporate calculating the interdiction effectiveness rate (IER) and agent training readiness. Border Patrol expects this metric to be completed and adopted by all southern border sectors by the end of FY 2019 (Provost, 3-9).

It is still unclear if the new version of this metric will be a significant improvement from its predecessor. Increasing the reliability of quantifying this information will be crucial if operational control will be relied on moving forward. If such a feat is possible, OPCON is likely to be the most comprehensive metric available to evaluate border security.

**Recommendations**

The metrics highlighted above are needed to allow policymakers to adequately address border security and provide the American people the necessary information to hold their elected officials accountable for preserving the integrity of the nation’s border. But as demonstrated, even though these metrics are critical, they are not perfect.

It does not mean that they are not valuable or necessary. Without the information these metrics provide, there would be nothing to guide strategic planning or decision-making on how to secure the border. Pointing out their flaws is not intended to dismiss their importance, but to demonstrate that they must be improved. Below are some recommendations for doing so.

**Every metric should be reported monthly, or at the very least, quarterly.**

Increasing the frequency at which every metric is reported, so as to reflect the expediency of the monthly publication of apprehension totals, would aid in addressing the shifting realities on the ground more effectively and expediently. It would also give elected officials and the American public more oversight on the security of the border and allow non-government actors to enhance their studies on the matter and provide innovative insight.

**Incorporate data on asylum claims into the network of border security metrics.**

This change would more accurately reflect the actual composition of the majority of those currently seeking entrance into the United States. Without accounting for asylum, policymakers cannot address all aspects of border security since they lack information on one of the main causes of the current crisis.

**Increase research on how non-human capital increases border security.**

Resources are finite, so having this information would guide how to best allocate non-human capital—such as physical barriers, sensors, and cameras—aimed at assisting in apprehending, turning back, and deterring illegal entry among border sectors. On this front, progress is already in motion. DHS has accepted the recommendations put forward by the Government Accountability Office to start statistically evaluating the deterrent capabilities of border fencing (GAO 2017b, 36) and the reliability of technology to assist in detection and apprehension (GAO 2014, 11) and will report its findings moving forward.

**Expand the scope and improve the quality of border surveys.**

Increasing the reliability and range of surveys will help gather data that better encompasses the characteristics of migrants that come to the American border. Primarily relying on data from adult Mexican nationals will lead to conclusions based on a dwindling border crossing community. Expanding surveys, so they better incorporate Central Americans—especially family units and asylum seekers—will lead to the gathering of better information on migration patterns from the communities that are the most responsible for the increase in illegal border crossings.

The Encuestas Sobre Migracion en las Fronteras survey mentioned above is already used for information on immigration enforcement and border security. While EMIF Norte collects information on Mexican nationals in north Mexico, EMIF also separately surveys people from Guatemala, Honduras, and El Salvador. In their EMIF Sur studies, they conduct interviews on Mexico’s southern border with individuals from the Northern Triangle countries who intend to settle in Mexico or the United States indefinitely. They also survey people from those countries who were returned to their country of origin by American or Mexican immigration officials (EMIF). Incorporating both EMIF Norte and Sur when using surveys for information gathering or statistical estimates would enhance the quality of
Securing the border will help restore faith in immigration enforcement, reestablish indisputable American sovereignty, and protect national security.

Conclusion

While the border crisis appears to be improving compared to its height in 2019, it is unfortunately not over. Thousands of foreign nationals still pour into the country every day—putting their lives at risk by undertaking the dangerous journey to the border, enriching smuggling and trafficking organizations along the way, and overwhelming the American immigration system.

Improving metrics of activity along the border is necessary for improving border security. However, consistency in the use of border security metrics is just as important as their improvement. Illegal immigration is a complex and ever-evolving phenomenon. Therefore, specific metrics and their respective collection mechanisms need to be continuously reevaluated to establish if they are still appropriate. But throughout the history of INS and DHS, new metrics have been frequently constructed and discarded. Without the continuation of specific metrics, it is difficult to make a clear historical analysis of border security since each metric measures something different—even if slightly. If specific metrics and their methodologies are not in place for more than just a few years, they will not be useful when decisions on how to make the border more secure are made. Consistent reporting and evaluation allow elected officials to have benchmarks for improvements. Without such parameters, funding and strategic planning will be made arbitrarily.

Securing the border will help restore faith in immigration enforcement, reestablish indisputable American sovereignty, and protect national security. The best way to achieve this is by having quantitative information from border security metrics guide decision-making. With some improvements, data available through these metrics will become more reliable and comprehensive.
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**ABOUT THE AUTHOR**

*Igor Magalhaes* is a legislative fellow for Right on Immigration at Texas Public Policy Foundation. He has been involved in numerous political campaigns throughout the state and was an intern at the Foundation in legislative affairs.

During his undergraduate studies, Igor worked in both chambers of the Texas Legislature, first as a legislative intern for a state representative during the 85th Legislative Session and then as a communications assistant for Lt. Gov. Dan Patrick during the 86th.

Igor was born in Rio de Janeiro, Brazil, and moved to Houston in 2008 when his father received an offer to open a martial arts school in the United States. Igor went on to learn English and thrive in his studies, eventually earning bachelor’s degrees in both government and history with honors from the University of Texas at Austin in 2019.

Igor has a passion for immigration policy and Latin American affairs. He advocates for the preservation of American sovereignty and the rule of law while maintaining our country’s rich tradition of welcoming immigrants who hope to achieve a better life in the United States and contribute to society.

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