

### 3. Alternative Election Systems Study Guide

The purpose of this study is to determine if LWVPA should adopt a position in support of alternatives to the plurality or winner-take-all election systems used in most state and local jurisdictions to elect candidates for public office. It assumes that election systems fall into two categories, depending on whether the vote for a particular office will elect a single winner or multiple winners.

*Single-winner* systems elect executive officers, such as governor, mayor, attorney-general, etc. Elections for legislatures and councils based on single-member districts (SMDs) also use this method. SMD elected bodies currently include the U.S. House of Representatives and both chambers of the Pennsylvania General Assembly. Elections for the U.S. Senate are functionally single-winner, because even though each state has two senators, they stand for election in different years.

*Multiple-winner* systems elect two or more persons to the same office at the same time. In Pennsylvania, this occurs when electing members at large (rather than from single-member districts) for municipal and county councils or commissions and for school directors.

Some alternative methods for electing legislators retain geographic districts, but choose two or more winners from *multi-member districts* (MMDs). Some Pennsylvania school districts use MMDs. Multiple-winner methods also apply to judicial elections, when electing two or more members of a court on the same ballot. For example, in November 2015, Pennsylvanians elected three justices of the Pennsylvania Supreme Court, from a field of seven candidates.

Some Pennsylvania municipalities and school districts have mixed systems, electing some members of the legislative body at-large and the rest from single or multi-member districts.

#### **Single-winner Elections**

Most single-winner elections in Pennsylvania use the single-vote plurality (SVP) method: Each elector may vote for one and only one candidate, and the candidate with the most votes (a plurality) wins the election. Also known as first past the post, this traditional system has the advantage of simplicity; indeed, it is the simplest possible method.

#### **Potential problems with single-vote plurality elections**

As long as only two candidates compete for each office, SVP gives the same result as would most alternatives. Thus, there is no reason to resort to a more complicated method. However, when three or more significant candidates compete, single-vote plurality elections can result in the following problems.

- *Winners with less legitimacy.* With two candidates, a plurality is automatically a majority (more than 50 percent). If multiple candidates compete, the plurality winner can receive much less than a majority of votes. Such a result may weaken the victor's legitimacy in the eyes of the public.
- *Failure to represent majority preferences.* Despite low vote shares, some plurality winners can be the true choice of an underlying majority, in the sense that they would

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beat any of their opponents in a one-on-one contest. Voting theorists call such a candidate the Condorcet winner, after an 18th-century French mathematician. They often use the Condorcet criterion to test for the attainment of majority rule. Unfortunately, multi-candidate SVP contests sometimes elect narrowly supported candidates, whom the majority of voters dislike and oppose. It could be a leader of the political right wing or left wing. In such cases, plurality rule is tantamount to minority rule.

- *Spoilers.* When a plurality election fails to choose the Condorcet winner, a losing candidate has functioned as a spoiler. That is, in a two-way contest, A would defeat B, but with C on the ballot, B defeats A. Spoiler effects abound in American elections. The best-known example is Ralph Nader in the 2000 presidential election. If he had not been on the ballot in Florida, most observers agree that Al Gore would have won that state instead of George W. Bush, swinging the Electoral College from Bush to Gore.
- *Strategic dilemmas.* Voters who genuinely prefer a potential spoiler confront a dilemma: Should they vote sincerely for their true favorite, at the risk of electing the candidate they like least, or should they vote strategically, for whichever of the two front-runners they consider the lesser evil? To the extent that voters choose the strategic option, election results will understate the true level of support for the potential spoiler and the policies he or she advocates.
- *Restriction of ballot access.* Fear of spoilers motivates major parties and favored candidates to do all they can to keep minor parties and independents off the ballot. They do this by enacting difficult requirements for ballot access and by challenging signatures, when minor parties or candidates try to surmount those hurdles. Like strategic voting, denial of ballot access suppresses dissenting and potentially innovative political viewpoints.

### **Does Pennsylvania Need Alternative Methods for Single-Winner Elections?**

Given that the impetus to consider alternative methods for single-winner elections comes from problems that can occur with multi-candidate competition, how often do such contests appear on Pennsylvania ballots?

- *Presidential elections.* Fringe candidates are usually on the ballot in presidential elections. However, significant third-party candidacies are far from rare; they have competed in five of the last 12 elections (1968, 1980, 1992, 1996, and 2000).
- *State and local offices.* In Pennsylvania executive and legislative elections, single-winner contests with three or more significant candidates are relatively rare, in part because the Commonwealth's ballot access rules are strict. Minor party and independent candidates must obtain nominating paper signatures equal to at least two percent of the largest vote cast for an elected candidate in the last election within the district. Sometimes this number is many times larger than the number of nominating petition signatures needed for major party candidates to compete in the major party primary.

LWVPA supports legislation that would make the petition signature requirements for minor party and independent candidates the same as for major party candidates. If, as LWVPA recommends, Pennsylvania liberalizes its ballot access rules, multi-candidate contests could become more common.

- *Primaries.* Multi-candidate contests are frequent in primary elections, except when a party has an incumbent running for re-election. For example, in 2016, there were four

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candidates seeking the Democratic nomination for U.S. Senate. In 2014, four Democrats competed in their party's primary for Governor. The commonwealth could consider some, but not all, of the alternatives outlined below, as part of proposals for reforming (or even abolishing) primary elections.

### **Tested alternatives for single-winner elections**

Reformers and theorists have proposed innumerable novel methods for electing single winners, but only two alternatives have received extensive tests in government elections. These are the *runoff* and the *instant runoff*. Both aim to have elections won by a majority of votes, rather than a mere plurality.

#### *Runoffs*

The runoff is also known as the two-round system or the second ballot. Like the conventional method, the runoff uses a single-vote ballot: each elector may vote for one and only one candidate. However, to win, a candidate must receive a majority (more than 50 percent) of the votes. Some countries require a lesser threshold, e.g., 40 percent or 45 percent. If no candidate reaches the threshold, the top two vote-getters advance to a second round of voting (the runoff), which occurs a short time after the first round.

Worldwide, the runoff is the most common method in use for direct election of presidents. A number of American states, mostly in the South, use runoffs for primary or general elections, or both. France and some other countries, including many former French colonies, also use a variant of the runoff for legislative elections. (In French legislative elections, any candidate winning 12.5 percent of the vote in the first round may advance, though some may choose not to compete in the runoff.)

The standard version of the runoff ensures that the victor will receive a majority of votes cast in either the first or (if necessary) the second round of voting. This method also reduces the likelihood of a strategic voting dilemma. In the first round, voters can support a favorite with little hope of winning (e.g., Nader) and then switch to the lesser evil in the second round. Although the runoff does not guarantee to elect the Condorcet winner, it is more likely to do so than SVP. The runoff does guarantee not to elect the most unpopular candidate: someone who would lose to any of the other candidates in a one-on-one contest is sure to lose in the final round.

The runoff has two major drawbacks. First, it is costly to the government, parties, and voters to hold a second round of voting, if the first does not result in a majority winner. Second, turnout may differ substantially between the two rounds. Thus, the numerical appearance of majority rule may be misleading if a shrunken electorate, in either the first or the second round, affects who wins.

#### *Instant Runoff Voting*

Instant runoff voting (IRV) is also known internationally as the alternative vote or majority preferential voting. Its American supporters, led by the national reform organization FairVote, have recently taken to referring to IRV as Ranked-Choice Voting. However, that label describes only the balloting method and obscures the distinction between IRV and a method of proportional representation that the second section of this briefing will describe.

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In an IRV election, voters rank candidates in order of preference: 1 for first choice, 2 for second, and so on. The first round of counting tallies only first preferences. If one candidate receives a majority (more than 50 percent) of first preferences, that candidate wins the election. If no candidate has a majority, the process eliminates the candidate with the fewest first preference votes and transfers the votes of his or her supporters to their second choices. If those transfers enable a candidate to reach a majority, that person wins. If not, the process of candidate elimination and vote transfers repeats, until a candidate attains a majority.

As its name suggests, IRV aims at the same goal as the runoff--majority rule--without requiring voters to come to the polls a second time. Instead of multiple rounds of voting, IRV substitutes multiple rounds of vote counting. However, the two methods will not necessarily elect the same winner.

The runoff eliminates all but two candidates simultaneously, whereas IRV eliminates candidates sequentially, one at a time. In addition, campaigning and endorsements by eliminated candidates, between the first round and the runoff, may influence votes in the runoff. In addition, under IRV, all campaigning and agreements among candidates (about their recommendations for later preferences) must occur before Election Day. Also, differential turnout does not affect IRV. However, if some voters do not rank all the candidates, their ballots may become exhausted and thus not tallied in later rounds of counting.

Contrary to some claims that the instant-runoff system eliminates spoilers and strategic voting, far-sighted voters will still have an incentive to vote strategically in some situations. Consider an election with candidates L, R, and C (left, right, and center). If C is the first choice of fewer voters than either L or R, and no one votes strategically, then the first round will eliminate C. However, if supporters of L expect that their favorite will lose to R in the runoff, whereas C could defeat R one-on-one, they might want to shift their votes to C in the first round. This possibility also applies to conventional runoff voting. The proper claim is that IRV and conventional runoffs reduce the likelihood of spoilers and strategic voting compared with single-vote plurality.

Australia has more than a century's experience employing IRV for SMD legislative elections, including the federal House of Representatives and the lower chambers of state legislatures. Ireland uses the method to elect its president. Britain considered adopting IRV for parliamentary elections, but voters defeated the proposed reform in a 2011 referendum. In the United States, a number of municipalities in California and Minnesota have adopted Ranked Choice Voting, including IRV for executive elections. The League of Women Voters of Maine supports a 2016 initiative to adopt IRV for major elections in that state. Eleven other state League chapters have also adopted positions expressing support for IRV.

### **Less tested alternatives for single-winner elections**

Of the many other methods for electing single winners invented by theorists and would-be reformers, three are worth noting here. The first is well known in non-governmental uses and might be confused with IRV. The second and third have vigorous proponents, who often oppose IRV.

#### *The Borda count*

Named for another 18th-century French mathematician, Jean-Charles de Borda, the Borda count, like IRV, uses a ranked-choice ballot, but its decision rule is entirely different. It awards a

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candidate one point for each first-choice vote, two for each second choice, etc. It then sums points for each candidate, and the candidate with the lowest point score wins. Alternatively, the process inverts the points, so that the highest score wins.

Similar methods are used for determining team scores in track meets and other athletic contests and for deciding baseball's most valuable player. Committees and clubs often use the Borda count in hiring or membership decisions. Nevertheless, more than two centuries after its invention, only a few tiny places have used the Borda method for government elections. The reason is that the method is easily and obviously manipulable by strategic voting. For example, if the two frontrunners are candidates A and B, a voter intent on electing A has an incentive to rank B last, even if she sincerely considers B the second-best candidate.

Because many people are familiar with the Borda count (though few know its name), they may assume that IRV and Borda are the same thing, especially if IRV is promoted as "Ranked-Choice Voting". That confusion could affect votes in legislatures or referendums on whether to adopt IRV. Adopting IRV makes a public education campaign essential to inform voters that casting sincere votes for second- and third-choice candidates, etc., will not hurt their favorites' chances. Using a shorthand term, Borda violates the later no-harm criterion; IRV does not.

### *Approval voting*

Approval voting (also known as approval plurality) is similar to single-vote plurality in that each vote is binary: a candidate either receives a vote or does not, with no ranking, and the decision rule is plurality. Its novel feature is that electors may cast votes for (or approve) as many candidates as they wish. For example, if candidates A and A' appeal to the same group of voters, members of that group may vote for both and thus avoid losing to the candidate of a smaller bloc. Since it was first proposed in the 1970s, a number of academic and professional associations have used approval voting. No governmental body has adopted it, although one early political experiment occurred in Pennsylvania, a 1983 presidential straw vote by the state Democratic Committee.

In some instances, approval voting has worked as intended. However, the discretion it gives voters as to how many candidates to approve introduces a great deal of strategic uncertainty. To use the example above, candidates A and A' are still competing with each other: only one can win. Thus, each candidate will face the temptation to induce at least some supporters to bullet vote for only him or herself.

Thus, approval voting, like the Borda count, violates later no-harm. This logic can lead approval voting to degenerate to SVP, the system it intended to replace. Nevertheless, approval voting continues to receive vigorous advocacy, notably from a group called the Center for Election Science.

### *Range voting*

Range voting (aka score voting) asks electors to give each candidate a numerical score, from a specified range (e.g., 0 to 5, or 0 to 10). These scores are ratings rather than rankings, and more than one candidate may receive the same score. Cumulative or averaged candidates'

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scores determine the winner. This system resembles innumerable rating and feedback surveys online; therefore, voters will be familiar with the technique. Nevertheless, its use in seriously competitive elections is suspect.

Regardless of their true judgments, voters will be more likely to see their first choice win if they give the highest possible score to their favorites and a zero score to the candidates whom they like least. This strategic behavior loses the gradations of enthusiasm that proponents intend range voting to reflect.

Some voters may even give all candidates either a maximum or a minimum score. In this case, range voting is equivalent to approval voting. Advocates of the two systems recognize this possibility. Consequently, they often work together, particularly in opposing instant-runoff voting, despite the fact that they agree with proponents of IRV about deficiencies of conventional single-vote plurality.

### **Legislative and Other Multiple-Winner Elections**

The single-winner reforms described above are also applicable to legislative elections conducted using single-member districts. However, in evaluating electoral systems for an assembly or council, satisfying the will of the majority in each district is not enough. One must also consider the composition and functioning of the legislative body as a whole. How well does it reflect and respond to all the people of the state, county, or municipality? From this broader perspective, SMD legislative elections in Pennsylvania suffer from severe deficiencies that no single-winner electoral reform will solve. This is especially true for the two chambers of the General Assembly.

### **Problems with Legislative Elections in Pennsylvania**

Many informed citizens are aware of the shortcomings listed below. Nevertheless, few recognize how all are rooted in the system of electing legislators exclusively from single-member districts. While these problems are most often associated with elections to the state legislature, they may also occur in local elections.

#### *Gerrymandering*

Whenever geographic constituencies elect legislators, the location of district lines strongly influences – in many cases, predetermines – election results. SMD systems are more vulnerable to manipulation of boundaries than any other system. By devices such as packing (concentrating the supporters of a party in as few districts as possible) or cracking (dispersing the supporters of a party across two districts, so it will have a majority in neither), partisan decision-makers can shape the legislative map to their own advantage.

The temptation to gerrymander is virtually irresistible whenever politicians control the districting process. Both Democrats and Republicans indulge in the practice. However, after the 2000 and 2010 censuses, the Republicans (who controlled the Pennsylvania general assembly both times) carried it to extreme levels. In fact, the landmark United States Supreme Court case concerning gerrymandering (*Vieth v. Jubilerer*, 541 U.S. 267 [2004]) responded to a challenge to Pennsylvania's post-2000 congressional district map. In that case, a 5-4 Court majority declined to interfere with partisan gerrymandering. Thus, there were no legal barriers in the

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post-2010 redistricting. The process created Pennsylvania's current Seventh District, often cited as one of the most grotesque congressional districts in the U.S.

Ordinary legislation determines congressional districts in Pennsylvania, but a bipartisan legislative commission proposes districting for the state legislature. After challenges supported by LWVPA, the Pennsylvania Supreme Court moderated somewhat the commission's post-2010 state house and senate plans. The resulting state legislative maps appear to be primarily incumbent-protection gerrymanders, guaranteeing safe seats for most members of both parties.

Gerrymandered political maps dismay citizens and make a mockery of geographic representation. Reforms that take control of redistricting away from elected officials and emphasize traditional districting criteria, such as compactness and respect for county and municipal boundaries, would lessen cynicism and make constituencies more meaningful. Nevertheless, neutral districting processes and criteria will not fully solve all the problems inherent in SMD legislatures. Indeed, strict adherence to purely geographic criteria might even exacerbate the next two problems discussed below. That is because political demography, sometimes called unintentional gerrymandering, can produce results similar to deliberate packing. This is especially true in states such as Pennsylvania, with Democratic voters concentrated in urban centers and Republicans benefitting from more widely dispersed support.

### *Lack of competition*

In Pennsylvania, deliberate gerrymandering and political demography combine to prevent serious political competition in nearly every district. In November 2014, only 4.5 percent of 246 state and federal legislative races were truly competitive, with the winner's vote exceeding the loser's by less than 10 percent: nine of 203 for the state house, two of 25 for the state senate, and zero of 18 for the United States House of Representatives. More than half of the winners (126 of 246) faced no opposition from the other major party: three members of Congress, nine state senators, and 114 state representatives.

The scarcity of competitive elections has follow-on effects that undermine the quality of democracy and government. Voting turnout declines, as parties in most places do not gain by campaigning vigorously, and citizens believe (correctly) that their votes will not matter. Lacking the spur of competition, legislators are susceptible to complacency and corruption. Where the only serious threat to re-election comes from primaries dominated by ideological voters and special interests, Republicans pull to the right and Democrats to the left, exacerbating legislative polarization. Furthermore, Pennsylvania's closed primaries leave unaffiliated voters virtually disenfranchised in most legislative districts.

### *Partisan bias*

Applied to a legislature, the democratic principle of majority rule entails that, if either party receives the majority of votes added across all districts, that party should win a majority of seats. In Pennsylvania, intentional gerrymandering combines with political demography to violate this basic requirement of fair competition. Calculations indicate that in 2014 Democrats would need to have won about 55 percent of statewide votes for each chamber to win a bare majority of Congressional, state Senate, or state House seats, whereas Republicans could have

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maintained their control of each body with as little as 45 percent of the vote. This un-level playing field is not a new or temporary phenomenon. Since 1992, Republicans have had a majority of the state Senate after every election and have lost control of the state House of Representatives in only four of 24 years (and then only by very narrow margins). In statewide contests over the same period, Democrats have won every presidential election and three of six gubernatorial elections.

Systemic bias in legislative elections has consequences far more important than the disappointment suffered by losing candidates of the disadvantaged party. Continuation of the un-level playing field virtually guarantees divided control of government whenever a Democrat serves as governor. When legislators do not need to compete for the middle ground, parties become more polarized. The combination of divided government and polarization all too often produces legislative paralysis, exemplified by the budget deadlock of 2015-16. When compromises occur, they more frequently block or dilute the programs of Democratic governors, while requiring fewer concessions from Republican governors. The result over time is substantial harm to the interests of Democratic constituencies, as is evident in the ongoing funding crisis of urban school systems. Those constituencies, disillusioned by the policy failures of the chief executives they help elect, are increasingly likely to become cynical and politically disengaged.<sup>1</sup>

### *Under-representation of women and minorities*

Around the world, single-member plurality legislatures tend to have fewer women members than legislatures elected by some of the alternative systems discussed below. Because only one person can win per district, winner-take-all competition tends to produce negative, harshly adversarial campaigns. In addition, legislative service that pays a good salary puts a premium on individual ambition and careerism. Fewer women than men are able or willing to enter such a demanding and distasteful arena. In Pennsylvania, which pays the second-highest legislative salaries in the U.S., the tendency to under-represent women is especially strong. After the 2014 election, just 18.0 percent of state senators and 18.5 percent of state representatives were women. Women's overall share of seats, 18.2 percent, ranks a dismal 39th among American state legislatures, which average 24.4 percent. Partly because service in the state legislature is a typical stepping-stone to the U.S. Congress, Pennsylvania's record is even worse at the national level. The state's 18-member House delegation currently includes not one woman. Pennsylvania has never elected a woman to the U.S. Senate; that fact may or may not change in November 2016.

SMD legislatures also often under-represent minority racial or ethnic groups. In Pennsylvania, the geographic concentration of African-Americans in urban districts results in only a slight under-representation of members of that group. They constitute 10.0 percent of the state's population, compared with 8.5 percent of state representatives and 8.0 percent of state senators. However, only one of 18 members of Congress is African-American. (The serpentine lines of Pennsylvania's First congressional District were drawn to give the district an African-American plurality. However, Philadelphia Democratic Party Chair Bob Brady, who is white, has

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<sup>1</sup> The same problem is developing at the federal level.

held the seat since 1998.) Other minority groups, chiefly Hispanic and Asian, constitute about nine percent of the state's population, but have only 1.5 percent of state representatives and no state senators or Members of Congress.

Another criticism of SMD elections is that they promote a two-party system and make it difficult if not impossible for minor parties to win representation. Because of the two-party tradition in the U.S., many citizens will not regard this effect as a problem. For those who wish to preserve the dominance of two major parties, fine-tuning of the design features of the alternative systems discussed below can either impede or facilitate minor parties.

### **Reform Options for Legislative Elections**

As background for understanding the options that follow, it will be useful briefly to describe two polar-opposite multi-member systems, neither of which would be a good choice for elections in Pennsylvania.

The first is the multiple-winner extension of single-winner plurality: To fill M positions, each elector may vote for M candidates. Each vote counts equally, and the M individuals with the most votes win. If the members of the party or group with a plurality of votes agree on the same M candidates, their favorites will sweep all the seats, shutting out candidates from smaller parties or groups. Thus this system is often called *the bloc vote*, even if there is no legal requirement that people vote only for candidates from the same party.

For example, in New Jersey – which uses the bloc vote to elect its Assembly from two-member districts – 38 of the 40 districts currently have both members from the same party. Similarly, the at-large election of members of the five-seat Delaware County Council is by bloc voting. Even though a significant proportion of the county population is African American and/or vote for Democrats, no racial minority or Democrat has ever won a seat on the county council.

Sometimes, voting for just one party's bloc of candidates is a legal requirement. The best-known example is the Electoral College. In all states except Maine and Nebraska, citizens vote for statewide slates of electors pledged to a particular candidate, and the slate receiving a plurality of votes gets all the state's electors. For the Electoral College, and for any assembly or council elected at-large, bloc voting is the extreme version of a winner-take-all electoral system.

At the other end of the spectrum is party-list proportional representation (*list PR*). In the purest form of list PR (exemplified by the Netherlands and Israel), all members of the legislature are elected from nationwide party lists. Citizens cast votes for parties, not for individuals. However, the system is not winner-take-all. Instead, a formula designed to achieve proportionality between seats and votes determines the number of seats each party gets. Parties rank candidates on their lists in order to determine the sequence in which they will fill the available seats.

PR systems of this sort eliminate the districting problem at the expense of doing away with geographic representation. They ensure a high degree of proportionality, and thus tend to produce intense competition and high turnout. They typically result in multi-party legislatures, requiring cooperation among two or more parties to pass legislation. However, those legislative majorities usually represent a majority of voters.

Most PR systems include higher percentages of women and minority members than do legislatures based on single-member districts. Despite these advantages, pure forms of list PR

are unlikely reforms in Pennsylvania or the U.S. generally: they lack geographic representation and give great power to political parties. Consequently, reformers in the U.S. and other countries with similar political traditions tend (for different contexts) to favor either or both of the next two systems.

### **Mixed-member proportional (MMP)**

West Germany pioneered the mixed-member proportional electoral system after World War II, and MMP has successfully operated in Germany ever since. In 1992 and 1993 referendums, New Zealanders chose MMP to replace Pennsylvania-style single-member plurality elections for Parliament. That success helped inspire the adoption of MMP, also known as the additional member system, for new assemblies in Scotland, Wales, and London. Michigan reformers have recently proposed a version of MMP under the label Districts Plus.

MMP would be especially suitable if Pennsylvania merged the Senate and House into a new unicameral General Assembly. Such a reform could reduce the size of the legislature, a goal sought by many reformers. The method could also apply to either or both of the existing chambers. In any of these applications, election of the majority of legislators would be by plurality from single-member districts, just as they are now. In addition, a significant number of additional members would be drawn from statewide lists nominated by the parties--thus the mixed-member and additional member descriptions: the chamber mixes constituency and additional at-large representatives.<sup>2</sup>

A formula designed to establish proportionality between each party's statewide vote and its total number of legislators determines the allocation of additional members to each party. In this feature, known as compensatory allocation, the assignment of list seats compensates for departures from proportionality that would otherwise result from the distribution of votes across districts.

Because votes in every district affect the number of additional members each party wins, parties have an incentive to compete everywhere. Republicans will seek votes in cities, and Democrats will appeal for rural support. Similarly, voters in every district of the state will cast meaningful votes; therefore, turnout should increase. The compensatory formula guarantees that the party receiving the most votes statewide will win the most seats. Consequently, the system has no partisan bias, and there will be no profit from partisan gerrymandering. Nevertheless, MMP should represent a complement to redistricting reform, rather than a substitute or rival. MMP by itself would still give politicians an incentive to manipulate district lines to protect incumbents, and it does not change the desirability of ensuring sensible and meaningful constituencies.

In Germany and New Zealand, MMP has increased the representation of women and ethnic minorities. Parties appeal for their votes by including members of those groups among their list candidates, if too few are likely to win district seats. The extent to which women and minorities gain from MMP depends on the number of additional members relative to the total size of the chamber. If the share of list seats is the bare minimum needed to ensure proportionality – e.g.,

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<sup>2</sup> Philadelphia's City Council already has a two-tier mixed-member system. However, the selection of at-large members uses the [limited-vote](#) method, described later in this report, not by the proportional formula required for MMP.

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20 percent as in the proposed Michigan plan – gains will be relatively slight.<sup>3</sup> In contrast, Germany, with 50 percent list seats, and New Zealand, with 42 percent, currently have 36 percent and 31 percent women members in their national legislatures.

Would MMP help minor parties win representation? That depends on choices made about details of the system. In one-vote MMP, citizens cast just one vote, for a district candidate. However, allocation of additional members depends on the parties' statewide totals. Minor parties would have a difficult time competing under one-vote MMP, because they probably will not have the resources to run candidates in all districts.

Internationally, most MMP systems use a two-vote method. Citizens cast one vote for a district candidate and another vote for a political party. The second vote determines how many total seats the parties will get. In this version of MMP, a small party can compete for party votes, even if it is not able to run candidates in many constituencies. Another design feature affecting the prospects for minor parties is the use of a vote threshold. In both Germany and New Zealand, a party must receive five percent of the party vote to qualify for additional members. (Both countries make an exception for minor parties that win constituency seats. One district victory in New Zealand and three in Germany will qualify a small party to share in the system-wide allocation.) The process could also set a higher threshold. Thus, Pennsylvania can tweak the details of an MMP reform, depending on whether the goal is to give minor parties a better chance or to preserve a two-party system.

Proponents consider MMP the best of both worlds. It maintains the Anglo-American tradition of representation based on local geographic constituencies. At the same time, it ensures the overall fairness and majority rule that proportional representation is intended to achieve. For these reasons, among others, a survey of international voting system experts ranked MMP higher than any other method for choosing legislatures.

### **The single transferable vote (STV)**

Nevertheless, a second reform option also enjoys strong support among some experts and reformers, including leaders of the principal U.S. election reform organization, [FairVote](#). This is the method of ranked choice voting (RCV) in multi-member super districts. This system would typically include three to five times as many residents as current single-member districts. To avoid confusion with RCV in single-winner elections (instant runoff voting), this briefing will use the more traditional term, single-transferable vote (STV). The method is also known as quota preferential voting.

Ireland has used STV since 1921 to elect its parliament, the Dàil. Australia uses the method to elect members of the federal Senate and the upper chambers of most state legislatures. Various countries have also employed STV to elect local councils and boards, including the City Council of Cambridge, Massachusetts.

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<sup>3</sup> The Michigan plan would also assign all compensatory accountability seats to losing district candidates who made relatively good showings. Thus, female and minority candidates would first have to win district nominations in order to share in the compensatory allocation.

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As in its single-winner counterpart, IRV, voters in an STV election rank candidates in order of preference. Also as with IRV, the first round of counting only tallies first preferences. However, because STV elects multiple winners in each district, candidates win the election if they exceed a quota of votes smaller than a majority. The usual quota is the total number of votes divided by  $M + 1$ , where  $M$  is the district magnitude: the number of representatives from the district. For example, when electing four members, all candidates who receive more than 20 percent of first-preference votes win election.

If fewer than  $M$  candidates win on first preferences, a second departure from the IRV formula occurs. Instead of immediately eliminating the candidate with fewest votes, STV begins by transferring surplus votes from winning candidates. That is, it reassigns ballots, beyond those a candidate needs to surpass the quota, to the voters' second choices. Various methods exist for deciding the choice of ballots for transfers. These include random selection and fractional weighting of all ballots that supported winning candidates. Computerized transfers are advantageous unless the electorate is very small. The choice of a transfer method can affect who wins after the first round of counting. It is also necessary, in both IRV and STV, to tally ballots centrally in each constituency before carrying out transfers.

If these downward transfers do not enable the full complement of  $M$  candidates to exceed the quota, then the system resorts to upward transfers, as in IRV, by eliminating the candidate with fewest first preferences. If necessary, downward and upward transfers repeat until the process fills all  $M$  seats. The purpose of having two types of transfers is to minimize the number of wasted votes: those cast for a candidate who receives more votes than necessary or for one who receives too few. Thus, nearly all voters help elect someone: if not their first choice, then a second or third choice.

STV appeals to reformers in Anglo-American countries, because it preserves the tradition of voting for individuals rather than parties. In contrast, other forms of proportional representation require a vote that is explicitly or implicitly for a party. In the one-vote version of MMP, electors vote for individual candidates, but those votes also count statewide for candidates' parties.

Voting for candidates rather than parties makes STV especially suited for local elections, where the ballot is non-partisan or voters do not much care about party cues. In a partisan STV election, a voter can cross party lines, perhaps ranking a Green first, a Democrat second, a Republican third, and so on. A voter who wants to support candidates based on a criterion that transcends party, such as environmentalism or gender, might follow such a strategy.

Voters under STV are capable of sensible rankings only if district magnitude remains low and not too many parties compete. Constituencies for the Irish Dáil range from three to five members each, a magnitude usually considered the best range for STV districts.

A typical Australian Senate election fills six seats from each state, and five or six parties nominate candidates. Because Australian federal elections require voters to submit a complete ranking of all candidates, voters must rank-order thirty or more candidates! However, Australia permits parties to file recommended rankings not only of their own candidates, but also of candidates from all parties. Voters may indicate on the ballot that they wish to follow a particular party's ranking, and 98 percent of voters take that option. Thus, a system designed to maximize individual discretion, if it demands too much of voters, can end up functioning like one based on party lists.

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Compared with MMP, STV offers a less certain remedy for problems that afflict elections for Pennsylvania's state legislature. It keeps geographic districts and offers no statewide corrective. Therefore, gerrymandering is still possible and potentially profitable, although larger, fewer districts offer less potential for mischief.<sup>4</sup> With multi-member districts, both major parties can win at least one seat in most districts throughout the state, so they should compete more widely and broaden their geographic bases. Seats won should become more nearly proportional to votes, but small-magnitude districts and absence of statewide aggregation mean that proportionality will be less than with MMP. For the same reasons, STV does not guarantee that a party with a majority of votes will win a majority of seats.<sup>5</sup> With parties making multiple nominations per district and voters able to crisscross party lines, women and minority candidates will probably fare somewhat better than under the present system. However, the international experience on women's representation is not conclusive. The Dàil has only 16 percent women members, less than the Pennsylvania General Assembly. On the other hand, 38 percent of Australian Senators are women.

To weigh against its possible advantages, STV has at least two potential drawbacks. First, the process of transferring votes is complicated to explain and requires esoteric decisions about alternative methods. Second, candidates may compete as much, or more, with other candidates from their own party, as against candidates from other parties.

Parties can reduce intra-party competition by nominating slates with fewer than M candidates. However, if they do so in many districts, then the vigor of inter-party competition decreases. Combining STV, in general elections, with the abolition of party primaries might also be possible. In that case, intra-party competition in the general election might simply be a way to carry out the competition within parties that already occurs in primaries, but with lower cost and a larger electorate.

Regardless of how one judges its merits compared with MMP, STV offers an option for reform in settings where MMP is not feasible, either because elections are non-partisan or because the number of legislators is too small to allow for sufficient compensatory seats. Such settings include most municipal councils, school boards, and other local bodies. Elections to the U.S. House of Representative are also a better fit for STV than MMP, except in states with very large delegations. States with just one or two Members of Congress are not suited to STV, but they could use the single-winner ranked-choice voting system, IRV.

### Limited voting

Limited voting is a simpler multiple-winner system designed to guarantee representation for at least one minority party. In a constituency that will elect M winners, limited voting requires each elector to cast fewer than M votes. Each vote is binary: a candidate either receives a vote or

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<sup>4</sup> Ireland's experience shows that STV also creates incentive for so-called magnitude gerrymanders. By re-drawing district lines to change the number of members elected from different districts, and thus raising or lowering quotas, partisan manipulators can influence how many quotas each party is likely to attain. This can sometimes occur without violating the usual geographic criteria.

<sup>5</sup> Strictly speaking, the concept of a majority is ambiguous with any system of ranked-choice voting. Should it depend only on first preferences, or should it take into account later preferences?

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does not, and all votes count equally. The decision rule is multi-member plurality – the M candidates with the most votes win.

[The Pennsylvania Constitution](#) (art. IX, § 4) establishes limited voting as the default option for electing the three-member county commissions. For each election, the ballot lists all candidates and the vote determines the election for all three positions. However, each elector may only vote for two. This system gives the smaller party a better chance of winning one seat.

The Constitution also allows counties to adopt alternative ways of electing the county legislative body. Eight counties have done so: Allegheny, Delaware, Erie, Lackawanna, Lehigh, Luzerne, Northampton, and Philadelphia. Among them, Philadelphia has retained limited voting for the at-large tier of its Council. The Council has seven at-large members, but electors may vote for no more than five. (A plurality vote determines the election of the other ten members from single-member districts.) To protect further the minority party, each political parties may nominate no more than five candidates.

The limited vote is an improvement over multi-member bloc voting, because it gives a better chance of some representation to the minority party. It is also simpler to implement than MMP or STV. On the other hand, without restrictions on nominations, such as those that Philadelphia uses, succeeding under limiting voting can require rather sophisticated nomination and voter-coordination strategies. If the smaller party nominates more candidates than it can hope to elect, its nominees will compete primarily with each other rather than with candidates of the dominant party. Indeed, a minority-party candidate may win by making a deal for votes from the dominant party. If elected, such a victor will probably offer rather tame opposition. If opposition parties seek to avoid such intra-party competition by adopting more cautious nomination strategies, there will be little or no political competition, and no meaningful challenge to the power of the dominant party.

### **Cumulative voting**

Another multiple-winner option is cumulative voting. In the common version of this method, to elect M candidates, each voter gets to cast M votes. For example, if a voter has three votes to cast, she may allocate one vote each to three candidates, but she also has the option of cumulating votes by assigning two votes to one candidate and one to another, or all three votes to just one candidate. The tally process adds the votes, as if they were points, and the M candidates with the most votes win. By coordinating their vote-assignment strategies wisely, members of a minority group or party can win one or more seats where bloc voting would have shut them out.

Illinois used cumulative voting in three-member districts to elect members of the state House of Representatives from 1870 to 1980. The system had the virtue of electing some Democrats from downstate and some Republicans from Chicago. Corporate stockholder voting often uses the cumulative method. Councils and boards in some U.S. localities also use it to help elect more members from minority groups.

Like limited voting, cumulative voting offers an improvement over bloc voting for small council, commission, or board elections, when candidates run at-large or from multi-member districts. As

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does limited voting, it requires sophisticated nomination and vote-coordination strategies to be effective. It also presents the same danger of intra-minority competition, because the strategic challenges posed by limited and cumulative voting are essentially equivalent. Both require each party or group to find an optimal way to allocate supporters' fixed numbers of votes among M or fewer candidates.